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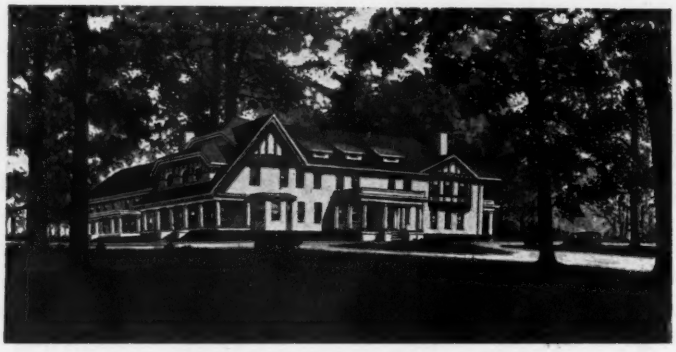

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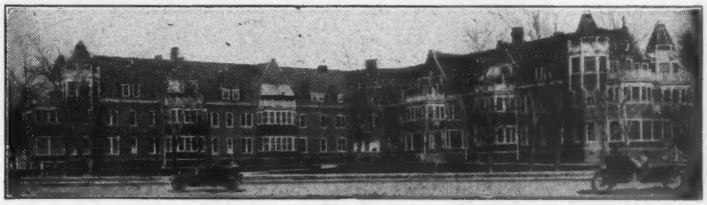

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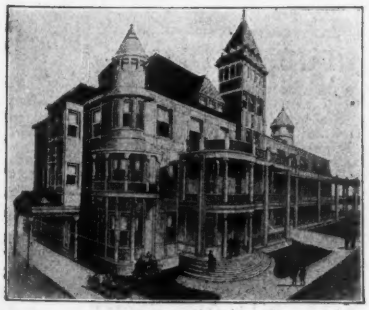

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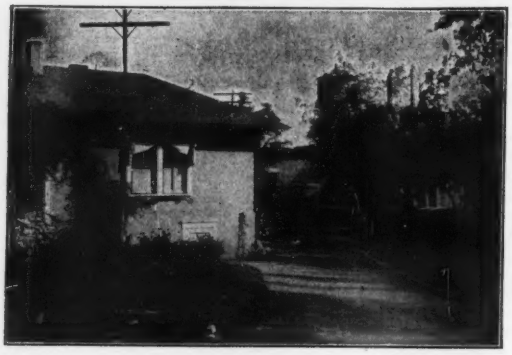

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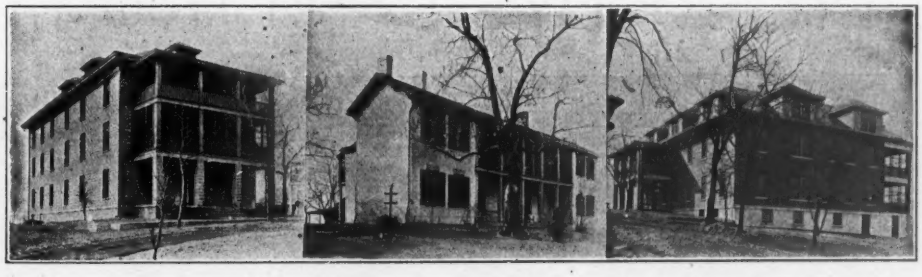

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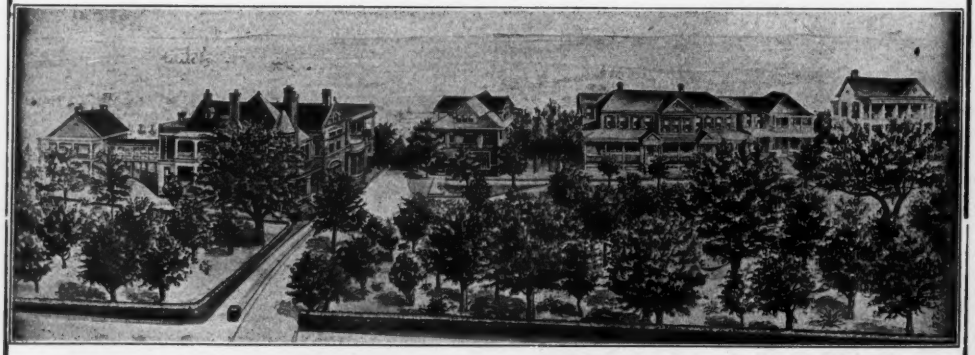

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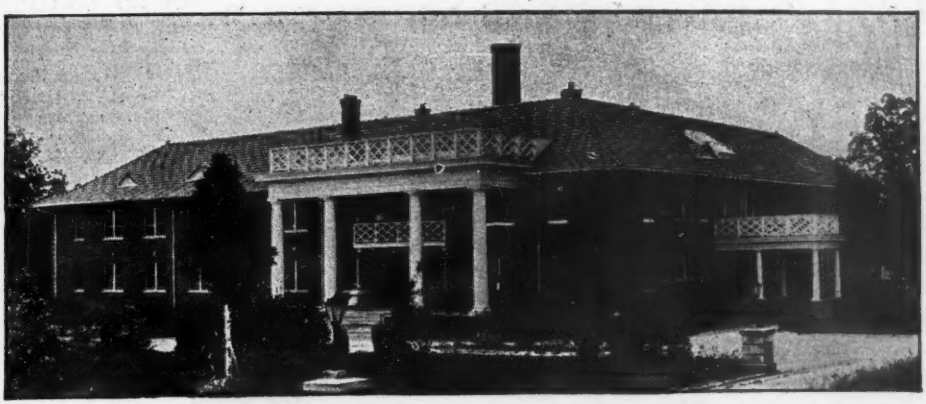

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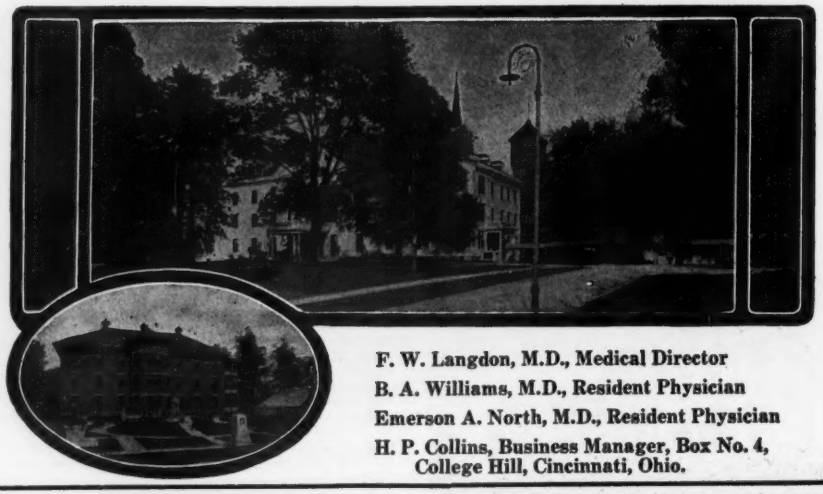

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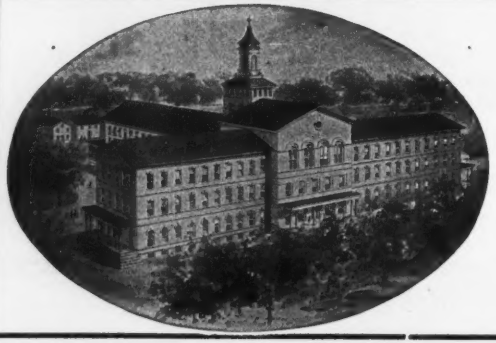

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COMBINATION COURSES: A student may enter the regular Freshman Class on 14 units and attend the College of Liberal Arts for two years, after which he will be admitted to the Freshman Medical Class, and upon the completion of his Sophomore year in the School of Medicine, can obtain the degree of Bachelor of Science, gaining his M.D. degree after another two years at the Medical College.

INSTRUCTION: Thorough laboratory training and systematic clinical teaching are special features of this institution. The faculty is composed of 106 professors and instructors, twelve of whom are full-time salaried men.

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MEDICAL DEPARTMENT

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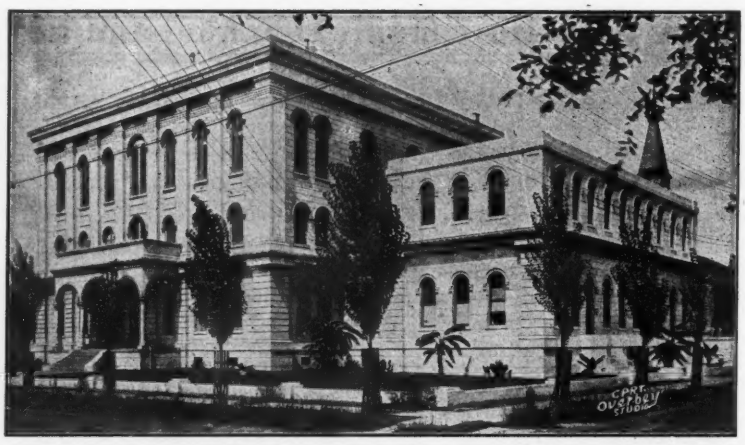

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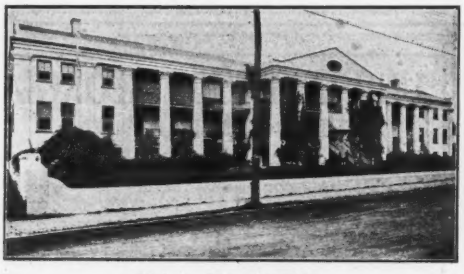

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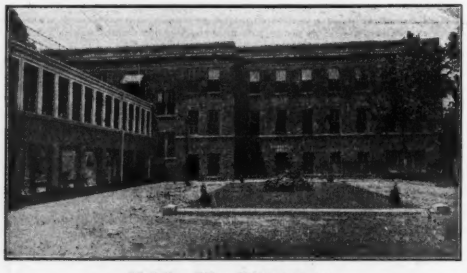

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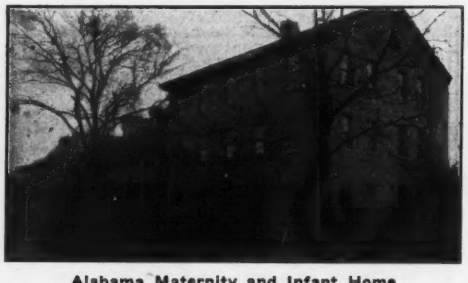

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Established 1834

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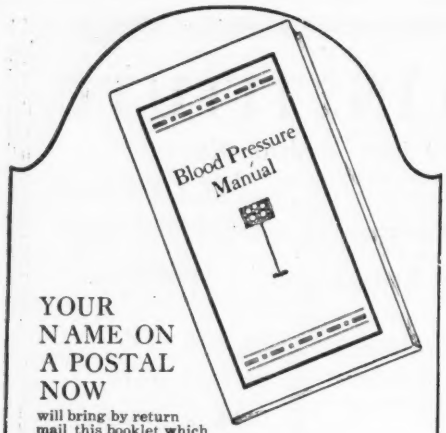

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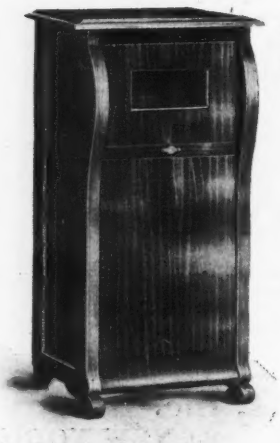

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(INTERNAL DISEASES, PEDIATRICS, NEUROLOGY, DIAGNOSTIC METHODS, ETC.)

THE ETIOLOGY OF POLIOMYELITIS*

BY HORACE GREELEY, M.D.,
Brooklyn, N. Y.

In a recent article* it was shown that by employing a new method of cultivation a bacillus with some very interesting characteristics could be grown from the spinal cords and brains of cases of human poliomyelitis. This method, which it is believed reproduces natural conditions more accurately than other methods of artificial cultivation, involves the use of solidified blood serum (Loeffler), the surface of which was smeared with a piece of the infected cord or brain tissue. The culture was then regularly wet with a fluid consisting of about 25 % serum (hydrocele or pleural exudate fluid) and 75 % bouillon (containing 50 % limewater). The wetting was effected by depositing about six drops of the fluid in the bottom of the tube (of slanted, solidified serum) and then tilting the tube so that the fluid would flow over the surface of the medium. This tilting was repeated at least once every 24 hours. Growths (in the case of poliomyelitis) usually appear within 2 days at 98° F., but it requires about 4 days for the organism to reach its maximum development on this medium. At this time it appears as a large sporulating bacillus and begins to liquify the serum (the latter usually only in transplants). Transplants from cultures developed as described may be made and continued indefinitely on ordinary unwashed Loeffler (solidified) serum.

When grown in the serum-fresh-tissue medium used in the Flexner-Noguchi anaerobic method of cultivation, the organism appears, as described and photographed by these authorities, as a minute organism not definitely either of bacillus or coccus shape. It can be made to assume the streptococcus-like formation, described by Rosenow and others, and then again be developed into a bipolar, sporulating bacillus. This latter was also done with a culture of the streptococcus which Dr. Rosenow himself very kindly sent the author. The organism grows well at summer temperature of 70° F. (also at any between this and 100° F.). The importance of this will be referred to later.

Culture medium inoculated with filtrates (Berkefeld filters) from fluid cultures of the organism or suspensions of infected tissue matter give growths of the organism as described.

In milk, as purchased upon the market and then sterilized, the organism grows readily, in a very minute form, without affecting its appearance or odor, and since the organism produces but the slightest amount of acid, coagulation is not usually produced—with only one culture out of nine from different sources could coagulation be produced.

This growth in milk readily takes place at 70° F., and when milk so infected is

*Cultivation of the Organism of Poliomyelitis Upon Solid Media and a Consideration of Its Behavior Under Varying Conditions. By Horace Greeley, M.D., Medical Record, New York, January 13, 1917.

pasteurized (142-145° F. for 30 minutes, standard of the New York City Department of Health) the organism is not injured, since vigorous growth at once develops in replants made from the milk after the pasteurization.

Thus pasteurization is no protection from poliomyelitis, and it is even conceivable that by removing non-sporulating organisms it gives any poliomyelitis bacilli present a freer field.

When grown in bouillon (as it may be after first development as described) the organism develops a single short flagellum and is actively motile.

Inoculation (intravenous) of cultures into cats produced the symptoms of distemper (sneezing, discharge from nose, etc.) and, occasionally, paralysis. (Similar results were subsequently obtained with dogs.) In rabbits occasional paralysis likewise developed. In both varieties of animals extreme congestion of meningeal vessels of cord and brain always followed inoculation and the organism was invariably recovered therefrom.

An accidental instillation of a drop of a culture into an experimentor's eye (my own) was followed in three days by an abortive attack of the malady and the organism was recovered from his throat. A suspension in saline of a drop of mucus from his throat produced paralysis in a rabbit; and some of this suspension intraperitoneally introduced into a young guinea pig was followed by death, with marked cerebral and cord lesions. (Two uninoculated guinea pigs and a young rabbit, which were in the cage with the inoculated pig at the time of his death, subsequently died and post-mortems showed similar lesions of the central nervous system. The organism was recovered in each instance.)

The organism, in the streptococcus-like form, is Gram-positive, and the polar bodies of the full grown bacilli are likewise Gram-positive. By transfer from fluid-serum culture to plain solidified serum (Loeffler's medium) the organism may be cultivated as a *Gram-negative* bacillus and (on the same medium) may be continued as such indefinitely. It seems that it is the defective development of the polar bodies which, in the last method of cultivation, causes the organism to become Gram-negative.

SEROLOGICAL REACTIONS

Blood sera from three cats, rendered immune to the organism by repeated inoculations, have been used to test cultures from different cases of poliomyelitis. Each serum agglutinated organisms of the culture used to produce it in dilutions of over 1 in 160, and those from other cultures in degrees varying from no agglutination at all to 1 in 160.

Sera from 6 acute, and from 44 convalescent, human cases have been tested as to their agglutinative powers against six cultures from different sources. The latter (sera from convalescents) were found to vary similarly to the immune animal sera. (Of course, agglutinative power was never so marked.) The sera from the acute cases were all practically without agglutinative power.

In one acute human case (16 years of age) of severe type, with persistent high temperature, bladder and bowel paralysis and marked and constant pain in the back, some of a mixture of the three immune animal seras was given (at the request of his physician) and was followed within 24 hours by relief from the back pain and voluntary passage of urine and feces. The patient died, however, from a left-sided pneumonia two days later.

GENERAL CONSIDERATIONS

The bacillus described, possessing the general characteristics of the bacilli known to cause distemper in dogs and cats, and allied organisms causing maladies sometimes giving paralytic symptoms in other domestic animals, at least belongs to this group. Besson (Bacteriology, English Edition) expresses the belief that the organisms of this group (which he calls the pasteurella) are in reality but modifications of the same bacillus.

It seems to me, for numerous reasons, more than probable that the organism causing human poliomyelitis is in reality identical with that causing animal distemper. I have compared, in several ways, the organism of dog distemper with that of poliomyelitis, and, so far, have been unable to detect greater differences than are to be found between

poliomyelitis cultures from different human cases.

The epidemiology of poliomyelitis contains numerous references to preceding or coincident outbreaks of paralytic disease among animals, some of the most striking of which are:

Poliomyelitis Epidemic	*Annotation*	*Authority*
Vermont, 1894	"Horses, dogs and fowls affected with paralytic disease."	Caverly: J. A. M. A., 1896, Vol. XXVI., p. 1.
Oceana Co., Michigan, 1907	"Paralytic disease of chickens."	Griffin: J. M. St. M. S., Feb., 1908.
Rhenish Westphalia, Germany, '09	"Great mortality among chickens."	Romer on Epidem. Kinderlah, Berlin, 1911.
Massachusetts, 1909	"Paralytic disease prevalent among animals."	Lovett: Month. Bull. Mass. St. B. of H., June, 1910.
Washington, D. C., 1910	"Paralytic disease appeared among ducks and chickens just prior to the outbreak."	Special Committee of Investigation.
California, 1910-'11	"Paralytic disease coincident among domestic animals."	Gundrum: Cal. St. J. of Med., May, 1913.
Cincinnati, O., 1911	"Paralytic disease coincident among domestic animals."	Frost: Hyg. Lab. Bul., No. 90.
Alaska, 1913	"Outbreak was preceded by a great epidemic of distemper among the dogs."	Pierson: J. A. M. A., Feb. 28, 1914.

The seasonal prevalence of poliomyelitis is interestingly compared with the temperature (70° F.) at which I found the organism capable of profuse growth. During the Washington, D. C., outbreak (comprising 506 cases) in 1910 the temperature ranged from 69.7 to 77.6° F.

During last summer, in New York City, the way in which the case incidence followed the thermometer is indicated in the following table:

Month	Mean Temperature	Cases Reported
May	59.3°F.	29
June	64.2°F.	756
July	73.8°F.	3863
August	73.6°F.	3306
September	66.0°F.	780
October	57.2°F.	193

In connection with the probable role of milk in carrying the infection, the prevalence, or rather the non-prevalence, of poliomyelitis among exclusively breast-fed infants is interesting. A search of the literature covering the approximately 50,000 cases that are recorded therein resulted in finding a total of less than 200 cases in which mothers' milk was alleged to have been the sole article of diet. No data as regards exclusive breast-feeding was taken in connection with the New York City epidemic of last summer, but, as less than 11 % of all cases were under one year of age, it is plain that comparatively very few, if any, exclusively breast-fed infants were affected.

IMPORTANCE OF POLIOMYELITIS TO THE SOUTHERN STATES

While the literature of the epidemiology of poliomyelitis covers epidemics embracing some 50,000 cases, very few of these have been in the Southern states. As far as I have been able to ascertain, the following covers this field:

Year	Locality	Number of Cases Reported
1841	W. Feliciania Parish, La.	10
1896	Greene Co., Alabama	15
1907	Live Oak, Fla.	16
1910	Washington, D. C.	506
1910	Maryland	300
1910	Virginia	335
1910	Oklahoma	20
1910	South Carolina	150
1911	Moorehouse Parish, La.	60
1911	Virginia (mountains)	25

However, since within the last few years the malady has appeared in sharp and increasingly large local epidemics from New York to California, in areas previously thought to have been free, and especially since the history of the malady shows that it tends to spread (one year to the other) to new and adjoining localities, the South had well be prepared for eventualities.

It may be that all epidemics of polio-

myelitis are caused by milk containing the organisms, very possibly derived from cows—since these animals are subject to infection by distemper group bacilli—and that for a consumer to develop poliomyelitis it be necessary for the germs to multiply in the milk to enormous numbers before it is swallowed. This would be in accord with the bacteriology of the disease, as given, its seasonal incidence, and would conform to the well known failure of the malady to spread among contacts (for instance over 95 % of the 9,000 cases in the New York City 1916 epidemic were single cases in families). Rural "sporadic" cases may be caused in the same manner, i. e., by the contaminated milk of an infected cow affecting the susceptible member of the single family using it.

Of course many of these rural, and even city, "sporadic" cases may be acquired from other animals, such as dogs or cats, possibly through contamination of milk with their nasal or buccal secretions, or even directly by personal contact. The incidence of such direct transmission from animal to man can not, however, be greater than that from man to man and this is evidently very small.

THE MINOR COMPLAINTS OF CHILDREN*

By Samuel S. Adams, A.M., M.D.,
Washington, D. C.

As the Chairman selected the subject of this paper, he doubtless had in mind the tendency of the family physician to give too much liberty to mothers in treating young children and the fact that, although the discussion must necessarily savor of the primary in medicine, it might, nevertheless, stimulate him to greater vigilance in treating the so-called minor ailments. To discuss them is not an easy task, because the apparently trivial may develop into the serious, and, on the other hand, the alarmingly high fever disappears after emptying the gastroenteric tract. An attempt will be made to point out some of the more common conditions which are unquestionably responsible for the unstable equilibrium in the child's "make-up." In doing this many sacred traditions may be ignored; yea, even heretical utterances be made, but in this day, when the child's ailments demand special study, one must cast aside those ideas pertaining to sickness which our grandmothers cherished, as well as the superstitions and methods of treatment which the revered "Mammy," even today, clings to so tenaciously.

COLIC

The baby has the colic, either the six weeks', the three months' or the seven months' variety. He must be tolerated until his time is up. Meanwhile, he is dosed with oils, carminatives and "dope." He screams after each nursing, but since "he gets enough breast milk it is the colic." We shall watch him nurse; he sucks, lets go, yells, butts, grabs hold again until from exhaustion he falls asleep. "Of course it is the colic; hear him belch." Try this experiment: If ordinarily he nurses from one breast let him have both at each feeding; if no improvement results give him a couple of ounces of barley or arrowroot water before each nursing, and to the mother one-half glass of milk. Now, if this fails, give him an alternate feeding of modified milk and observe which feeding is followed by lack of uncomfortable symptoms, when it can be determined whether to wean the child or use supplemental food. Again, the milk runs from the mother's breast between nursings, so she has plenty for the child, but he still has colic and yells from pain after being taken from the breast. In this case suspend the nursing for forty-eight hours, feed substitute food, and then inquire about the breast. In all probability there is no milk, and the crying was from hunger. If the child has colic tonight he will give evidence of it in the stool he has tomorrow. Insufficient milk, unbalanced milk, irregular or too frequent nursing may cause colic, but it is easily remedied without medication.

TEETHING

It is with much hesitancy that I touch upon that medical hoodoo—teething. That the eruption of the deciduous teeth is a physiological process will be admitted by all; yet it is made the loophole for hasty,

*Read in Section on Medicine, Symposium on Pediatrics, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

unscientific, careless and incorrect diagnostication of many serious ailments. The teeth are frequently blamed for the condition of the child when more careful study and observation will discover the seat of disease far removed from these innocent adjuncts. I do not desire to be understood as saying that the eruption of such teeth never makes the infant sick, but I do assert that an experience of forty years in a hospital devoted to the diseases of children has convinced me that other factors are present to explain the symptoms. To tell the mother that her infant's cries and sleeplessness are caused by the teeth will undoubtedly allay her anxiety, but "watchful waiting" fails to discover the suspected offender for several weeks, perhaps months, thereafter. In a study of ten thousand cases in which the time of appearance of the first set of teeth was recorded by different clinicians on the Dispensary Service of the Children's Hospital, District of Columbia, the histories invariably showed lesions which could account for the symptoms, while the suspected tooth was hidden from view. One frequently meets with cases of indigestion, high fever, pain and wakefulness attributed to "teething," but later indiscretion in diet, diphtheria, tonsillitis or abscess of the middle ear looms up to exonerate the inoffensive teeth.

Have you seen this picture? Infant, aged 18 months, taken suddenly ill with rigor or convulsion, followed by high fever, jerky respiration and expiratory grunt. You were told that "the parents are unnecessarily alarmed over the feverishness and restlessness, and that the infant is only cutting a tooth." Did you find his temperature 105 or 106° F. with the physical signs of lobar pneumonia? Yes, and the attending physician would have discovered it but for the fact that he still clings to one of the most dangerous fetiches in modern medicine. Otitis media, tuberculous meningitis, scurvy, a fractured long bone, and a foreign body in the rectum have, in turn, been attributed to "teething." It is well to banish from the mind "teething" as a cause of disease and seek diligently for the pathological condition.

SLEEP

Exaggerated statements of the mother that her infant sleeps neither day nor night often perplex the physician. Knowing that the normal child is usually a good sleeper and convincing himself that the infant in question is in good physical condition, he will look for the cause in habits which the mother can hardly be convinced one so young can form. During some ailments the infant may have been held in the arms to fall asleep, and so promptly cries when placed in his crib.

Again, the house must be in perfect quietude; only a whisper is permitted, and all must "tip-toe." A trivial noise will awaken the "hush" baby—a nuisance instead of a joy in the home. Train the baby to sleep under conditions natural to the ordinary home, but to do this it will be necessary to train the mother—preferably during pregnancy.

When brought face to face with the sleepless infant, direct the mother to put him to bed at the accustomed time and let him cry. Two nights will suffice for this training unless the spell be broken by turning on the lights or taking the child from his bed, when all will have to be done over.

In cases where mothers are too nervous or worn out to accomplish this I have frequently persuaded the parents to send the child to the hospital, where in a few days the sleep habit is formed.

If any mother boasts about her baby's being a splendid sleeper and says that he is put to bed at 6 P. M. and sleeps until 7 A. M., the physician naturally becomes suspicious, especially if the child is under six months of age. Young infants, if well, do not sleep twelve consecutive hours unless they are drugged. The unscrupulous nurse carries her potions and powders of "dope" into the nursery and uses them to prevent her own rest's being broken. Such good sleeping infants must be critically examined and carefully watched.

The young child is often excited by rollicking just before he retires. Sleep will not come at once to him, for he will be wakeful and restless.

The older child may become a poor sleeper from various disturbances. Probably the majority of such cases are due to indigestion caused by the ingestion of unsuitable food just before bedtime. It is not the empty stomach that disturbs the sleep center, but one overburdened with indigestible substances. Possibly he may

have his sleep interfered with by ghost stories or thrilling tales intended for his amusement, or an injudicious nurse has frightened him by threats of being stolen—threats made to induce sleep but which produce the opposite effect.

A few pathological conditions are sometimes responsible for disturbances of sleep: adenoids, enlarged tonsils, adherent prepuce, "seat worms," etc.

If the cause can not be ascertained and removed, one is justified in resorting to hypnotics for a few nights only, care being taken not to accustom the child to drugs. The Harrison law, though far from perfect, has been a boon to young children, but the mother must always be on the alert, as evidenced by the following case: Twin girls, aged 4 years, vivacious and happy, carefully trained by the mother, were placed under the care of an expensive nursery governess. Soon the mother was alarmed by the stillness which pervaded the nursery too soon after the children had bade her good night. Suspicions accumulated until the mother determined to investigate. The governess had put one to bed and she was sound asleep. The mother began to undress the other child, when the nurse became insulted and left the room. The child said: "Mother, don't give me 'meddy.' Fraulein gave Emily some, but I don't want it." She then pointed to the closet and said: "It is up on the shelf." The bottle contained the commonest whiskey, and the first little girl was in a drunken sleep. This dastardly wretch escaped prosecution because no drug was found, though she was guilty of this terrible act.

NIGHT TERRORS

The mild and severe forms of night terrors differ in degree only and may be considered reflex irritation. The picture of the child screaming out in his sleep, standing, staring, trembling, unconscious yet seizing his parents and at last falling back from exhaustion, is a familiar one. The cause is usually faulty nutrition, but adenoids, enlarged tonsils, foreign bodies in the intestines, an adherent prepuce, thrilling stories told for amusement or moving pictures should be considered as factors in the causation of this more serious condition, just as they are of the sleeplessness to which I have referred.

In the management of such cases look to the diet, because it is responsible in a majority of instances. Eliminate meat from the evening meal of a child under ten years of age. In treating the paroxysm an impression should be made upon the nervous system. This can be accomplished by throwing on the face with force enough to sting, a cloth or sponge wet with cold water, or placing him under a cold shower. Should there be simple anemia or chlorosis, ferruginous tonics, without alcohol, are beneficial, while bromids and opiates are harmful.

INTESTINAL PARASITES

One of the parasites may infest the gastroenteric tract of the child. The oxyuris and lumbricoides are the most common varieties found in children, while the taeniac are occasionally met with. The hookworm, so common in the Southern states, is rarely seen in the North. In children's hospitals, where the child's stool is examined as a routine, it is surprising how rarely either the ova or parasites are found. This contradicts the general belief that so many of the child's disturbances are due to "worms."

Instead of accepting "nose-picking," voracious appetite, sleeplessness, dark circles under the eyes and transitory colicky pains as sure signs of "worms," it is better to have the stool examined by a competent bacteriologist whose opinion would guide us in the treatment.

EARACHE

This is usually due to an inflammation of the middle ear, either catarrhal or suppurative. In the older child there is no difficulty in locating the pain, but in the infant the diagnosis is not so easy. A typical case may be cited: X, an infant, has an ordinary "head cold," which abates in two or three days. Suddenly he awakens or stops playing and gives out the most piercing cry, which is characteristic. This cry is intermittent, recurring especially on attempts to swallow. He will not lie upon the affected ear, but if held in the arms will rest that side of the face upon the nurse's shoulder or against her face or neck to get some relief from his pain by the heat from her body. The temperature is usually elevated two or three degrees, and distress is depicted on his counte-

nance. If by pressing upon the tragus of either ear he draws his head away from the hand and cries, a diagnosis is clear. On the other hand, if no pain is elicited by pressure on the tragus, earache may be excluded.

If the otoscope is at hand we can determine whether the drum is red or bulging. If red the douche must be used, but if bulging paracentesis must be resorted to at once.

As earache usually happens at night, or when the otologist is not to be found, relief must be had by tentative measures. Warm ½ teaspoonful of a 5 to 10 % solution of phenic acid in glycerine and pour into the affected ear. The pain is generally instantly stopped. It may, however, return in an hour or two, when the application should be repeated. With subsidence of pain the ear should be gently douched with a saturated solution of boric acid at 112° F. every hour or two, using at least two quarts. Hold the bag a few inches above the auditory canal to prevent too much pressure upon the drum.

FAINTING

Occasional fainting is common in school girls between the twelfth and sixteenth years. It is usually accepted as one of the necessary incidents of puberty and the unfortunate girl is left to her fate—the complete establishment of menstruation. Inquiry will show that they are properly clothed, but untrained and poorly fed. The following case illustrates how a girl of this class lives:

CASE REPORT

Case E. D., female, aged 16, bright and of high standing in the high school, came under observation after repeatedly fainting, at times, in school. Her family history was excellent. She usually had her own way, especially about her eating, sleeping, exercise and social pleasures. She refused repeatedly to consult me, although when confined in bed she was a most obedient patient. After one of her severe faintings I was summoned to the house. It was her habit to get up too late to eat breakfast with the family, so she would grab a small piece of bread, which she would eat while putting on her wraps. After riding a mile in a closed, ill-ventilated street car, she would enter chapel among the last. She made four brilliant recitations before recess, after which she had one-half hour in which to eat luncheon, which consisted of an apple and a small piece of cake. After one more recitation she would ride to her home. Here she would find a hearty meal, but she was not hungry and would not eat. After reading or studying a couple of hours she would go for a walk, during which soda water and candy were indulged in freely. At the 6 o'clock dinner she was not hungry and often ate the dessert and nothing else. After being vexed by her mother's urging her to eat she would either go to her room or to a movie. She retired some time between 10 and 11 P. M. Occasionally she would go to the theater or a dance, retiring somewhat later. Soon she complained of nausea, indigestion, "nervousness," fatigue, crying and fainting, and her menstruation was irregular, scanty and painful.

Under orders she was required to eat a substantial breakfast before going to school; to dispense with the school luncheon and have a hot meal at home at 1:30 P. M.; ice cream, soda water and candy in the afternoon were forbidden; and a bountiful dinner was insisted upon.

For a few days she rebelled against this regime, but soon not only took the food prescribed but was eager for her meals.

In one month there was a transformation; the pale, cantankerous and fainting girl became rosy-cheeked, affable, and hardy.

DISCUSSION

Dr. L. T. Royster, Norfolk, Va.—The most frequent fault, and the most common cause of error in diagnosis, is failure to examine patients, and that is particularly true of children. We are all prone to rush into a room, take the temperature, or perhaps not, and not sufficiently examine the child. A vast majority of consultations on the part of specialists in diseases of children would be avoided if the family physician were to make an adequate examination. This is particularly true of two conditions, one of which is pneumonia, in which the stethoscope has not been used because the child is crying, or the mother has the child tied up in red flannel and mutton suet, and it is too much trouble to take that off. The other is otitis, in which case the practitioner is not accustomed to use an ear speculum. I shall dwell on that fact for the young general practitioners. No physician has a right to examine a child if he does not know how to use an ear speculum. I say that emphatically. I do not say that you must be an aurist or resort to paracentesis. I never perform this myself. I am not capable of cutting the drum properly, but I can tell whether the drum needs cutting or not.

One thing, in passing, about the feeding of the child. Dr. Adams touched upon the question of the amount the child is getting from the mother. A simple procedure is weighing before and after nursing. This is very important.

The question of teething has also been touched upon. We hear so much about teething during the summer, or second summer. Mothers dread the second summer. It is not half so bad in a warm climate as the first summer, and teething has nothing to do with summer diarrheas. By regulating the diet and instituting proper measures, these summer diarrheas can be stopped. Most children teethe without their mothers knowing about it, and that is the way the normal child teethes.

One of the greatest causes of restlessness at

night and also digestive disturbances of major importance is overclothing. It is not my custom personally to use much, if any, woolen clothing. The houses in our cities are getting to be overheated and with the advent of the barbaric apartment houses, a return to the cliff dwellers' existence, it is an exception not to find most of them overheated. Instead of being underheated, we find the temperature ranges from 75 to 85°, and if parents put on children, living in such places, woolen underwear they cause a great trouble right there. I believe in wrapping children up when they go out of doors, but indoors the clothing should be consistent.

A child may have an otitis without a bulging drum, and even the best ear specialist is unable sometimes to find redness and indications for cutting the drum. We are quite sure in other cases otitis exists. I have seen pus come out of a perfectly normal drum or tympanum. I do not believe in making it a universal rule to cut the drum when we find any trouble, but it does occur, and I shall go one step further than Dr. Adams. I think to err on the safe side we had better cut the drum rather than leave a red drum uncut. It is safer if the drum is red to cut it, and I prefer an ear specialist to cut the drum when it is red rather than wait for bulging. If this is done, you are certainly on the safe side.

Dr. William E. Ross, Jacksonville, Fla.—In speaking of Dr. Adams' paper, I am going to touch on one subject only, that of colic in the breast-fed baby. As you all know, we have lots of colic in the breast-fed baby. I think it is practically always due to one of three things. The first is the hours of feeding. The second is the food elements in the milk, and a third is some unknown element in a small percentage of cases where we are obliged to take the baby off of breast milk.

As to the hours of feeding, generally the colicky baby is one that is fed irregularly and frequently. The mother thinks it is her duty to feed the baby whenever it cries. The first thing to do to relieve that colic is to put the baby on very infrequent feedings, with hot water between times. A baby that is taken off irregular feeding and put on a four-hour schedule will frequently be relieved of the colic. If it is not relieved of the colic, then small quantities of water, barley water or arrowroot is given the baby immediately before nursing. That will cover the element of time which is frequently the cause of indigestion.

The next factor is the element of food substance, and it is generally the cream in the rich breast milk which is at fault. This can be overcome by the infrequent feedings of the child, giving the child time for the milk to digest in the stomach; also the addition of fluid before the baby takes the breast.

Dr. Adams spoke of the child's nursing from two breasts instead of one. If we follow these conclusions we shall find that in the vast majority of cases the colic will last but a short time.

The third is that unfortunate class in which the secretion of mother's milk cannot be adjusted to the infant's needs. Those are the extremely infrequent cases where we take the baby off of breast milk.

Dr. Adams (closing).—Reference was made yesterday to my tirade against Pasteurized milk. What I said at the American Pediatric Society was that nothing would please me better than to have as an epitaph on my tombstone, "He fought to a finish commercially Pasteurized milk, not home Pasteurization," and that is what I am opposed to, not that the physician needs supervision.

My observation has been through many years that too much liberty is given to the nurse. This is also true in maternity hospitals. Very few graduate nurses know a normal stool or know what the proper amount of food for a child is or should be. I have had constant trouble in the Children's Hospital in this respect. A child is ordered to take forty ounces of food in 24 hours, or in private practice an order may be given to give a child 24 ounces of food in 24 hours. When a child is losing, after having one or two normal stools a day, and is retaining everything, I am puzzled. I find the child gets the bottle. When I investigate and ask the amount of food the child takes, I find it has possibly taken 20 or 30 ounces of food in 24 hours. It is put down on the record as ordered, and not as given. Many cases of underweight or undergrowth of children may be brought on in that way. Constant supervision over the feeding of infants is necessary to insure accuracy.

THE TREATMENT OF THE AVERAGE CASE OF TUBERCULOSIS*

By John J. Lloyd, M.D.,
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An analysis of the 1,700 cases discharged from the Virginia State Sanatorium gives only 22 % incipient, 78 % being moderately or far advanced. Therefore, taking this as a normal estimate, the average case appears to have progressed to the moderately or far advanced stage before seeking treatment, and it is chiefly with the management of the advanced case, considered as the average case, that this paper deals.

The treatment of tuberculosis, like the practice of medicine in general, consists largely of common sense management. While many things are done for the patient and more or less medicine given, after all is said and done it is the way in which the patient is managed, the impression made upon his viewpoint which will determine the result.

*Read in Section on Medicine, Symposium on Tuberculosis, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

If, when undertaking the care of a tuberculous patient, the physician would fortify both himself and his patient against avoidable accident, he must have a firmly implanted faith in the restorative value of rest.

The nature of the disease, its well known treachery and uncertainty of progress, its tendency to relapse and improve even when untreated, make one both an optimist and a pessimist as to the outcome, but at the same time demand a spirit of supreme optimism for the daily ministration to the tuberculous patient.

There are a few facts about the pathology of the disease that it is well to bear in mind, viz: first, that tubercle formation, except in the acute case, is a slow, chronic process and that tubercles in various stages of development and degeneration are present in the majority of cases coming under treatment.

Second, lung tissue once destroyed is never replaced and at best recovery occurs with a lung more or less crippled by scar tissue, cavity formation and adhesions.

Third, healing is slow and in most instances is an incomplete process and in its accomplishment requires many months, more probably years, of patient and careful treatment.

Both for the welfare and comfort of the patient, as accurate a prognosis as possible must be arrived at, but in forming the prognosis we must not lose sight of the fact that tuberculosis is the most hopeful of all chronic diseases and that remarkable improvement is at times obtained in even the seemingly hopeless case. This point was so well illustrated in the long and wonderful life of usefulness and accomplishment of the late Dr. Trudeau. A summing up of the history considered with the character of the onset and the apparent duration of illness, the nature of symptoms present and the extent and apparent severity of the lesion will enable us to form a reasonably accurate prognosis. If the prognosis is a hopeless one, our efforts will be devoted to making the last days of the patient as free from care and discomfort as possible, whereas in the earlier cases we insist upon rules which would be onerous did they not hold out a promise of reward.

Co-operation and mutual trust between physician and patient are indispensable. Can a patient use necessary preventive measures if he thinks he has no reason to do so? Can he guard himself in the thousand and one little things each day that play such an important part in his recovery if he thinks he is being treated for "weak lungs" or is simply "run down?" He can not, and he will not. Nothing lays so good a basis for co-operation as frankness and truthfulness,—the patient must have explained to him the nature of tuberculosis, the fact that he has tuberculosis and that he must exert all his effort to get well, and that at best it requires many months to accomplish this result.

To tell a patient to rest, eat and live outdoors means nothing, but if the time and trouble are taken in the beginning to go into detail and explain what rest really means, define the number of hours' rest he must take daily, the amount and kind of exercise, if any, he is allowed; when and how much food he shall eat and see for ourselves where and how a sleeping porch can be built so that he may live out of doors, we have given him something which he can grasp, provided he have a reasonable degree of intelligence and a desire to do his part.

Tuberculosis is the greatest ally of the "Fool Killer" known to mankind, and as it was once expressed by a patient, "it takes grace, grit and gumption to take the cure and hold the result," and it might be added that "gumption" is not least in importance of the three.

While it is true that there are well-tried and accepted rules for treating tuberculosis in general, at the same time, if the most is to be gotten from treatment, we must individualize and treat the patient, not the disease, for there are few diseases in which psychology plays so important a part.

Again there are numerous non-tuberculous complications which often materially retard recovery in the individual patient, e. g., syphilis, chronic appendicitis or pelvic inflammatory disease, chronic tonsillitis or inflammation of the nose or one of its accessory sinuses. If

the complication can be removed without subjecting the patient to a general anesthetic it is often wise to advise operation, and it is surely always advisable actively to treat syphilis early in the management of any case of tuberculosis.

A good set of teeth is of great importance in any condition, but as proper assimilation of food is so necessary to recovery in tuberculosis, the teeth should receive special consideration in this disease.

Not until each of the foregoing factors has been thoroughly considered are we in a position intelligently to manage the case.

The three remedies for tuberculosis which have been tried and not found wanting are:

1. Rest;
2. Food; and
3. Outdoor air.

Of the three rest is by all odds the remedy *par excellence*. If choice has to be made between a patient's being in bed in the house or sitting up out of doors, our choice, while symptoms are present, is for the bed.

If tuberculosis were regarded with the same degree of respect as typhoid fever, patients would be kept in bed so long as any symptoms are present. Rest reduces waste to a minimum, and therefore food taken goes further. Rest lessens the absorption of poisons from the diseased process, and therefore it benefits the general condition of the patient, lowers the fever, slows the pulse and reduces all symptoms more surely and more rapidly than any other remedy.

People are accustomed to think of digestion as depending upon more or less active bodily exercise, but just the reverse is true in treating tuberculosis. This is a hard thing for many physicians to accept and much harder for some patients to believe, but nevertheless it is a fact.

In early cases which in the beginning show slight symptoms, it is not usually necessary to confine the patient to bed, but they may be allowed to rest in a reclining chair, preferably of the type of the Adirondack recliner or the tilt-back recliner such as Dr. Minor uses. However, these chairs cost a considerable sum and they can not be bought by a large number of patients, but all have their beds.

The following outline is intended for the patient who is sick with tuberculosis as evidenced by fever, elevation of pulse, loss of weight and strength, poor digestion, etc. A safe rule is to allow no patient to be up whose temperature reaches 99.6° or pulse above 100 or in whom any other symptoms are marked, for it has been found by sad experience that to do so is simply to court disaster.

Rest, as nearly absolute as possible, should be insisted upon for at least two weeks after all symptoms have been absent and an immediate return to rest should symptoms recur. This must be explained to the patient, for in cases who are on the ragged edge even the exertion of holding a book or a newspaper may be more than is good for him, and the excitement of seeing visitors may be far from beneficial. Usually, however, patients can safely be allowed to read, knit, tat, etc., even while in bed, for contentment of mind is most desirable.

Care must be taken to see that he is warm enough in cold weather. Several layers of paper beneath the mattress and sufficient warm clothing upon the body are preferable to piling on more bed clothes which, by their weight, are often fatiguing. In the warm months we should use special care to see that the head is protected from the sun.

Second to rest in importance is food. Even today some patients are stuffed beyond all reason with the result that valuable time is wasted in patching up disordered digestive organs even where no permanent damage has been done. In most tuberculous patients, the digestion is impaired and for this reason the digestive organs should be saved all unnecessary work. By far the majority of people can assimilate four or five glasses of milk in addition to three fairly good meals in twenty-four hours. This is enough food for the average case, and if the digestion rebels under this amount it is wise to cut down on the quantity of milk or leave it off temporarily.

Some are convinced that they can not drink milk, but as a matter of fact most of them can if they will. A little lime water or citrate of soda with the milk

usually relieves the disagreeable distension of which they so often complain. Occasionally, however, one is found who really can not handle milk. Then eggs should be substituted.

Plain, simple, well-balanced meals, well prepared, well served at regular hours and in sufficient amount are what the physician must insist upon. However, this must not be left to chance, and he must see for himself that his orders are being carried out. A gain in weight is desirable, and with the patient at rest and taking suitable food it may be expected. A gain to slightly above the patient's previous normal weight or up to his insurance standard is sufficient, and when this is reached milk should be discontinued.

Whenever possible a sleeping porch is most helpful for the cure, for here the patient can spend practically all of his time out of doors. The porch should face the south and be protected on the west, or on the side from which the severe storms come, by sliding sash or a heavy drop curtain.

The room opening directly off the sleeping porch should be used as the patient's dressing room. In this way much exposure to cold may be prevented and the danger of house infection reduced. It is important that patients do not become chilled in getting into or out of bed, so the dressing room should be kept well heated in cold weather.

While the patient is confined to bed he can spend at least twenty hours daily out of doors, going inside only for necessary toilets and for meals. After he begins to sit up he will spend more time indoors, but the aim is to keep patients out doors at least eighteen hours daily. While patients are "on the cure" the physician is constantly called on to cheer them up and to encourage them; and it is during this time of enforced idleness that so much can be done by a study of the psychology of the individual. After patients, especially women, have been in bed for a long time they some times become discouraged. At this time much benefit may be gotten from the mental effect of allowing them to be dressed and put up in a recliner or on top of the bed for a short while. Diversions such as already mentioned, reading, writing or sewing, tatting, etc., and also the phonograph are very useful, and when a patient once gets the right viewpoint it is wonderful how cheerful and how earnest he becomes.

After the necessary period of rest has quieted down all symptoms and the patient seems well enough to begin getting up, comes the time when he is hardest to control, but when control is most necessary. It is at this point that a patient is most apt to violate orders, for now he feels better than for months, and it is hard for him to believe that a very little over-exertion may produce a flare-up requiring another long period of absolute rest.

The return to active life must be a very gradual one: at first a few minutes may be allowed out of bed in a chair once or twice a day. Then it is gradually extended to one or one and one-half hours twice a day when in addition sitting up in a chair for meals may be permitted. After a few days of this with no apparent harm, the patient may be allowed to dress and walk about his porch and room for a few minutes daily, and gradually to increase the time of exercise so that by the end of three or four months he is walking two hours twice a day. It is very important, however, to insist upon rest from 11 o'clock in the morning to 3:30 or 4 in the afternoon as long as he is on the cure. After this a short rest before and at least one hour after dinner should be taken and early bedtime kept up as long as possible. Supper in bed and a good night's rest will often relieve the fatigue of a strenuous day, as a Sunday spent in bed will patch up after a tedious week.

Many patients are not so fortunate as to be able to devote so long a time to the cure as this outline would require, nor to continue a midday rest after returning to work, but wherever possible this is the routine desired. The majority of patients must return to earning a livelihood before they are in condition to do so, and in these cases a chance must be taken and exercise increased more rapidly in order that they may become "hardened up" before returning to work.

It is surprising to watch how quickly

a patient regains his strength after a protracted rest in bed has stopped absorption of poison, and therefore the physician need not be afraid of keeping patients flat of their backs as long as necessary.

Exercise is a most dangerous medicine in tuberculosis and needs to be doled out in very guarded doses and increased at long intervals. In fact, nothing can be left to chance, therefore we must make out a schedule for each patient to live by, i. e., the hour for rising, breakfast hour, exercise period, hour for forenoon nourishment, dinner, afternoon exercise and nourishment, supper and bedtime. And it is most helpful if every patient keep an accurate daily diary for inspection at each call, for from this a definite idea of what the patient's daily routine is can be obtained, and often the cause is apparent which prevents his improving as he should.

The remainder of the treatment of the average case consists in relieving symptoms. There is no medicine which destroys or harms the bacilli, but to relieve an annoying cough by appropriate remedies or a pleurisy by strapping, does help the patient. Opiates should be used sparingly, for as tuberculosis is a chronic disease there is much danger of converting patients into morphine habitues.

The only symptom which we wish to discuss is hemorrhage. There is a large number of patients who have had hemorrhages, even severe hemorrhages, which stopped spontaneously without treatment of any kind. There is a lesson to be learned from this, viz: not to overtreat a hemorrhage and especially to use morphine sparingly and in very small doses for the condition. The nitrites immediately, and their continuance if blood pressure is elevated, apparently do good and a daily saline purgative is of benefit. The diet should consist of small quantities of easily digested food, served cold. The fluid intake should be somewhat limited for the first few days, but the quantity should not be reduced to the point where the patient is water-hungry.

Here, as throughout the treatment of the case, we must use common sense and pin our faith to rest as the remedy. It is much safer to keep the hemorrhage case in bed for several weeks longer than necessary and then let him up very gradually than to take chances on allowing him up too soon.

The management of any case of tuberculosis, no matter how excellent the immediate result, is a failure if the patient relapse promptly or infect some other individual. While on the cure he should not only regain his health to some extent, but learn to live so that he may be able to return to work and continue to improve, but above all else he should learn the proper care of and disposal of all his sputum. He must be taught to cover the mouth and nose with gauze when coughing, clearing the throat or sneezing, and to expectorate directly into a paper sputum cup, which, with the gauze, should be promptly burned when soiled. A fresh cup and a piece of gauze should be used daily or oftener if soiled on the outside, and the hands and face kept scrupulously clean at all times. Separate eating utensils should be used for the patient and thoroughly sterilized by boiling so long as he is raising sputum.

If outdoor life had no claim whatever in benefiting tuberculosis, the one fact that it materially reduces the chance of infection would make it invaluable.

The most important factors in the management of the average case of tuberculosis may be summarized as follows:

1. The importance of an accurate diagnosis as affecting the prognosis and therefore the management of the case;

2. The value of frankness and truthfulness in gaining the patient's co-operation, which is indispensable if we are to help him back to health;

3. The blessing of rest, good food and fresh air and the danger of indiscrete exercise in treating tuberculosis; and

4. The far-reaching importance of reducing future tuberculosis by properly instructing each individual case in the simple measures of prevention.

And in conclusion we would again emphasize the fact that unless while he is under treatment the patient has been so thoroughly instructed that he knows how to prevent his bacilli from infecting some one else, then we have failed in that case, no matter how good the immediate or the after result may have been.

EMETINE HYDROCHLORID: A NOTE CONCERNING ITS INTRAVENOUS ADMINISTRATION

By Joseph W. Larimore, A.B., M.D.,
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The greatly increased use of emetine preparations, usually of emetine hydrochlorid, which has resulted from the demonstration of its great amoebacidal action and especially of an amoebic infection associated in pyorrhea alveolaris, has caused a great deal to be written about the toxicity of the drug. It may be worth while to make a note concerning the intravenous administration, which has been until recently very little used.

Dalimier has determined the toxic dose per kilogram of body weight for a rabbit as 0.202 grams by intravenous injection and 0.03 gram subcutaneous injection, and for a guinea pig 0.007 and 0.09 gram, respectively. For a man he calculated the toxic dose for a person of 60 kilograms as being 0.12 gram by intravenous injection and 1.8 gram, or fifteen times as much by subcutaneous injection, and established the safe dose as 0.06 gram by intravenous injection and 1.2 gram by subcutaneous injection, which is 1 and 20 grams, respectively. Cases are reported which received by two and three daily injections a total of 1.44 gram in 18 days with pronounced toxic symptoms, chiefly paralysis or muscular weakness. Another case had toxic symptoms on a total of 1.2 gram. Dalimier suggests that emetine has an accumulative action, and thinks that the total dose of 1 gram of emetine is the limit of safety. Dalimier, in experiments on rabbits, apparently demonstrated the accumulative toxicity, as the continued use of small doses, which individually are without important effect, terminated fatally with profuse diarrhea and rapid emaciation.

Levy and Rountree, after experimental work with the drug, give the following suggestions for rational emetine therapy:

1. Its administration is not harmless, even in therapeutic doses, as ill effects may follow.
2. Patients differ in their reaction.
3. Various commercial preparations vary widely in toxicity.
4. The subcutaneous route is one of choice and one-third grain three times a day for 7 to 10 days is usually safe.
5. Continued small doses over a long period may prove harmful. And
6. Intravenous injections should be employed only in extreme cases in small doses and well diluted (½ grain in 100 c. c. of salt solution).

Bearman and Heineman state that the intravenous injections of 60 to 200 mgs. cause no serious disturbance. There is a slight vertigo and transient flushing of the face and some retching. If this dose is exceeded and 300 to 400 mgs. are injected, serious symptoms result. General vascular paralysis in from 2 to 5 minutes after injection with cessation of respiration, loss of consciousness, great slowing of the pulse and diarrhea.

These men show that relatively small doses, sometimes in small volume, quickly injected cause abrupt fall of blood pressure and often death. (In their experiments death is ascribed to acute cardiac dilatation.) They suggest, but have not determined, a vasomotor paralysis as explaining the venous congestion of the abdominal organs. On the other hand, they have given well diluted and slowly injected tremendous doses. They give as a maximum intravenous dose 250 mgs. per kilogram of body weight. Vedder condemns this large dose and states that he would hesitate before administering even one grain intravenously in a human case.

Few of the pharmaceutical manufacturers advise intravenous administration and never in doses of more than 0.5 grain.

Pellini and Wallace report experiments in which death occurred most promptly following intravenous administration to dogs, and was due to cardiac paralysis. In cats they found that 0.15 gm. per kilogram weight given subcutaneously caused death in about four hours by respiratory failure. With smaller doses death occurred in 18 to 36 hours from gastro-intestinal changes. In a medium-sized anesthetized dog an intravenous injection of 0.01 gram of emetine hydrochlorid caused a slight transient rise in blood pressure, followed by a sharp fall which quickly recovered. They showed that the fall in blood pressure was

not due to vasodilatation, but could be ascribed entirely to cardiac weakness. Intravenous injection of 0.04 gm. caused the auricle to show a marked weakening in contraction, and the ventricle a lessened contraction and increased relaxation, which changes are synchronous with a fall in blood pressure and decrease in volume of the organs tested. With larger doses the heart contractions cease, the auricle stopping before the ventricle. The cutting of the vagi or the use of atropine is without influence and the conclusion is drawn that emetine acts upon the heart muscle and not upon the vagus.

These authors calculate that to obtain a 1-100,000 solution of emetine in the blood as has been shown by Vedder and Rogers to be an efficient amorbacidal dilution, it is necessary to have 0.05 gm. of emetine in the circulation at one time. They assume that there is a lesser concentration in the blood at any one time, when such a dose is given subcutaneously, and that it is concentrated in the excretory tissues of the alimentary tract, which accounts for its strong amorbacidal action. These authors conclude that emetine depresses and may eventually paralyze the heart; that in normal individuals when given moderate doses, such action may not be of importance, yet in pathologic states of the circulation of the intestinal tract, or of metabolism, there may be a definite danger.

It is obvious that intravenous administration of one-grain doses will secure in the blood an adequate amoebacidal dilution. This would perhaps connote an even greater concentration of the drug in the excretory tissues, but I have not in many proctosigmoidoscopic examinations of cases under treatment found any evidence of a harmful action of such concentration, if it occurs; and there have been no symptoms. The mucous membrane shows a rapid and continuous return to normal.

I have used emetine intravenously in the treatment of amoebic dysentery during the past year, using 1 grain at each injection. The injections were given quickly and in one milliliter of fluid.

CASE REPORTS

Case 1.—Aet. 38. Weight 112 lbs. Heart normal, rate 54. Received 14 injections in the course of three weeks. There was no reaction until after the eighth injection, and then only a slight immediate dizziness and a slight nausea a few hours after the injections.

Case 2.—Aet. 33. Weight 121 lbs. Heart normal. Received 5 injections given daily in one course and subsequently 8 injections in the second course. He had no reaction.

Case 3.—Aet. 28. Weight 99 lbs. Heart normal. Received 14 injections during 4 weeks. The injections caused slight immediate dizziness, slight strengthening of the pulse without change in the rate, and after three hours a very moderate nausea. This patient insisted that subcutaneous injection, which had previously been used, had affected her in the same way.

Case 4.—Aet. 54. Weight 132 lbs. Heart normal. Received 14 successive daily injections. He had a slight immediate momentary dizziness and slight nausea several hours afterward.

Case 5.—Aet. 36. Weight 149 lbs. Heart normal. Received 11 injections during 3 weeks, the first 5 being consecutive daily administrations. These gave no reaction. He later received another course of 4 intravenous injections, after each of which he felt "dopy." When discharged his blood pressure was 84 mm. systolic and 60 mm. diastolic.

Case 6.—Aet. 17. Weight 119 lbs. Heart normal. Received 7 intravenous injections, 1 grain each, given on consecutive days. The first dose caused immediate dizziness, as also the second. The third dose caused some retching. The fourth dose made him very sick, as also the fifth. The sickness consisted in nausea and retching about two to three hours after injection.

Case 7.—Aet. 29. Weight 133 lbs. Heart normal. Received intravenous emetine 6 doses, 1 grain each, on consecutive days. There was no reaction.

Case 8.—Aet. 44. Weight 140 lbs. Heart normal. Received 8 injections, 1 grain each, on alternating days. There was no reaction.

Case 9.—Aet. 23. Heart normal. Weight 125 lbs. Received 6 injections, the first four being on consecutive days, the next two being a few days apart. Prior to one injection of 2 grains intravenously, the blood pressure was 106 mm.—66 mm. and during an hour following 100 mm.—80 mm. He claimed he did not feel well, but was of very low mentality and could describe his symptoms only as a trembling and dizzy feeling. There was no remote reaction. After six months he had a course of 4 injections, 1 grain each, given on consecutive days.

Case 10.—Aet. 18. Weight 109 lbs. Heart normal. Received 8 injections. The first 5 were on consecutive days, the others at intervals of 2 to 3 days. He later received a course of 4 injections, 1 grain each, every other day. The subjective disturbances after the seventh dose were described as a dizziness and funny feeling about the eyes. There was no objective reaction.

Case 11.—Aet. 12. Weight 116 lbs. Heart normal, except for pulse rate of 95. Received 6 intravenous injections. The first 3 were given on consecutive days, the others every other day. At no time did the patient have any symptoms

until the last dose gave slight dizziness while the patient was returning home on a street car.

In one non-endamoebic case in which the drug was used for a therapeutic test there was after 24 hours a severe attack of vomiting and diarrhea. This could not necessarily be ascribed to the injection. This case had a hypertension of 180 millimeters and an occasional intermittent pulse. The symptoms, however, were apparently gastrointestinal rather than circulatory, unless perhaps there was a circulatory element in the vomiting.

The intravenous use of emetine would apparently give more adequate concentration of the emetine in the circulation. It obviates the soreness which follows the subcutaneous, and also, in a lesser degree, the intramuscular injections. This, however, is not so severe as unduly to favor intravenous administration. Its avoidance, however, facilitates the handling of certain types of patients. If emetine injected in any manner is adequately concentrated by the selective excretory faculty of the gastrointestinal mucosa, it is not necessary to secure its greater concentration by the intravenous injection. However, this selective excretory faculty is only presumptive and it is doubtful if it is exercised by the hepatic parenchyma or by the gums, and in the use of emetine for infection at these sites intravenous injection would seem to be more efficacious. After several injections there was noted in a few cases an arterial hypotension. A few cases gave no subjective reaction until after several doses suggesting an accumulative action.

The intravenous administration of emetine in one-grain doses undiluted and rapidly injected without serious or even inconveniencing symptoms, would indicate that it is a safe procedure.
Wall Bldg.

AUTHORS' ABSTRACTS

Medicine

The Hecht-Weinberg-Gradwohl Test in the Diagnosis of Syphilis: Its Superiority Over the Wassermann Test in Untreated and Treated Syphilitics. R. B. H. Gradwohl, St. Louis, Mo. The Journal of the American Medical Association, Vol. LXVIII., No. 7, February 17, 1917, p. 514.

This paper discusses the fact that in the writer's experience, which is not much different from other investigators, the classical Wassermann test fails to catch more than about 65 % of all syphilitics, treated or untreated. This he believes due partly to flaws inherent in the test itself, namely, the failure to take into account and utilize the natural complement and natural amboceptor present in nearly all human sera. Besides he, like Busila and Noguchi, believes that the heating of blood sera such as is necessary in the Wassermann test, often destroys the syphilitic anti-body upon which the reaction depends. In order to remedy these flaws, Gradwohl has so modified the original test brought out by Hecht and Weinberg as to make it an extremely practical and useful one. He claims that by means of this test more than 15 % is added to the column of positives with the Wassermann. There are no contradictions to this result: with a positive Wassermann, you always obtain a positive Hecht-Gradwohl test; with a negative Wassermann, you frequently obtain a positive Hecht - Gradwohl reaction. Besides catching positives in untreated syphilitics with this test, where the Wassermann is repeatedly negative, this test, besides more delicate and absolute than the Wassermann, is a better control over the treatment of syphilis than the Wassermann. The Wassermann disappears readily under the treatment, but the Hecht-Gradwohl does not. In fact, it remains for a long time in spite of most intensive treatment. Therefore, when it becomes negative, it is a much more encouraging circumstance for the therapeutist to pin his faith to than is the Wassermann. This fact has been corroborated by Heidingsfeld, Wolbarst, Schmidst and others.

In dealing with so-called "border-line" Wassermanns, this test is of great value. Many border-line Wassermanns are due to the inhibition of hemolysis by a small amount of syphilitic antibody present in the serum under examination; others are "spurious" reactions. In such cases, if the reaction is really a positive one, the Hecht-Gradwohl test is strongly positive; if it is spurious, this test is completely negative. There are no border-line Hecht-Gradwohl reactions; they are clean-cut positives and negatives.

The Laboratory Diagnosis of Poliomyelitis. Josephine B. Neal, New York, N. Y. American Journal of Public Health, Vol. VII., No. 2, February, 1917, p. 144.

There is no purely "laboratory diagnosis" of poliomyelitis during the life of the patient, though examination of the spinal fluid in doubtful cases is indispensable. It is by ruling out other conditions that it is of most value, and it is of the greatest service only when correlated with a careful clinical study of the case.

The spinal fluid in poliomyelitis is usually increased in amount and escapes under pressure. It is clear or slightly hazy in appearance, and sometimes shows the febrin web formation, formerly considered pathognomonic of tuberculous meningitis.

There is a varying increase in the cells and in the albumin and globulin; in most cases a moderate increase in cells, albumin and globulin, indicating a moderate inflammatory reaction. The reduction of Fehling's is practically as prompt as in normal fluids.

The cells usually show a preponderance of mononuclears. In a few cases the polymorphonuclears predominate. But the number or type of cells in polio fluids does not bear any direct relation to the prognosis of the disease.

The fluid in tuberculous meningitis most nearly resembles that of polio, but the number of cells per c. mm. is usually greater than in polio, the increase in albumin and globulin more marked and the reduction of Fehling's not so good. The tubercle bacillus can usually be demonstrated and the clinical picture is different. The fluid of meningism is clear, increased in amount, and with rare exceptions normal in character.

Amebic Dysentery. John W. McGuire, Chicago, Ill. Illinois Medical Journal, Vol. XXXI., No. 3, March, 1917, p. 168.

Amebic dysentery, an acute infection of the large bowel, is endemic in nearly every country and climate, but is much more severe and more frequent in the tropics and subtropics. It is spread by contaminated water, fresh food grown on polluted soil, and carriers.

The intestinal amebae are *Entameba coli*, a harmless commensal, sluggish, and gray in color, and *Entameba histolytica*, the pathogenic form, larger, more active, and greenish-yellow in color. The encysted amebae enter the alimentary canal through the mouth and develop in the large intestine, where the enzymic action of the metabolic products of *E. histolytica* causes necrosis of the tissues.

The acute type is characterized by sudden pain and tenesmus in the abdomen, vomiting, anorexia, frequent motions containing blood, amebae and necrotic material, and high fever. Sudden fall in the temperature indicates either recovery or gangrene. The latter is usually fatal. The chronic type has alternate diarrhea and constipation and causes slow emaciation. It may easily become acute. In the latent type there are no symptoms but the patient is a carrier, and acute dysentery may set in at any time. Mixed bacillary and amebic infections have the same symptoms as the acute amebic, but there is great constitutional disturbance and it is usually fatal. In every type, *E. histolytica* is found in the passages.

The patient should be placed at rest in bed and be given a sedative suppository to relieve the pain. A large dose of castor oil should then be followed by one-third to one-half grain of emetin hydrochlorid or ipecac three times a day for two or three days. Appendicostomy is the best treatment for gangrenous complication. After the acute symptoms are gone, dilute tannic acid should be used to irrigate the bowel.

Blood Fibrin Formation in Diagnosis. Harold E. Smith, New York, N. Y. Medical Record, January 13, 1917, p. 61.

An increase in the fibrin formation in freshly drawn blood has been claimed to be of diagnostic significance in the determination of the production of serofibrinous exudate in the body.

The technique of the test is very simple. A small drop of blood is placed upon a glass slide and covered with a cover glass, care being taken not to press upon the latter. After five minutes the drop is examined under oil immersion. In normal blood the red cells appear in distinct groups with clear open space between them, crossed by an occasional fine colorless strand of fibrin. In blood showing increased fibrin formation (hyperinosis) the strands are more numerous, varying from a few to a large number. When a large increase is present there is seen a mass of fibrin making a heavy network which entirely fills the spaces between the red cells.

Observations were made at the Knickerbocker Hospital, New York, of cases of acute peritonitis, lobar pneumonia, acute articular rheumatism, fibrinous pleurisy, meningitis, acute salpingitis, empyema of the gall bladder, and other conditions accompanied by serofibrinous exudate. Various degrees of increased fibrin formation appeared in these conditions, depending upon the degree of activity of the process of exudate formation. The blood in pathological conditions unaccompanied by a serofibrinous exudate showed no such increase.

Further Attempts to Transmit Pellagra to Monkeys. Edward Francis. United States Public Health Service, Hygienic Laboratory, Bulletin No. 106, January, 1917.

The opinion of some workers that pellagra is a specific infectious disease, and the report by Harris, of New Orleans, of the production of pellagra in the monkey by the injection of a Berkefeld filtrate of pellagrous tissues, led the United States Public Health Service as a part of its study of pellagra to attack exhaustively the problem of the infectivity of pellagrous tissues and body fluids for the rhesus monkey.

The experiments here reported consist of a series of inoculations and feedings of pellagrous tissues and fluids into 90 rhesus monkeys, 3 baboons, and 1 Java monkey.

The experiments were begun at the United States Marine Hospital, Savannah, Ga., in July, 1913; were continued through 1914, and were completed in June, 1915.

The sources of the pellagrous material with which the animals were inoculated or fed were 10 autopsies and 50 living pellagrins. In all, 252 experiments were made with material collected during life or at autopsy.

The materials used for hypodermic inoculation included the brain, spinal cord and their membranes; the buccal, thoracic and abdominal contents complete; skin showing the pellagrous lesions; fresh blood; cerebrospinal fluid collected during life and at autopsy; pericardial fluid; urine; fresh diarrheal feces; fresh sputum.

The materials used for feeding by stomach tube included the brain, spinal cord and their membranes; the entire contents of buccal, thoracic and abdominal cavities; fresh diarrheal feces; spoiled corn meal.

Result.—The animals thus experimented upon showed no indications suggesting pellagra nor did they furnish any support for the view that pellagra is an infectious disease.

(Continued on page 662)

TROPICAL DISEASES AND PUBLIC HEALTH

THE CHRONIC DEGENERATIVE DISEASES: SOME OBSERVATIONS ON THEIR PREVALENCE, CAUSES AND PREVENTION*

BY J. P. MUNROE, M.D.,
Charlotte, N. C.

The figures presented in this paper are gathered from the reports published by the United States Census Bureau, and from the publications of the Life Extension Institute, New York. The ideas presented are based upon the writer's personal experience in a private practice dealing principally with the chronic degenerative diseases, reinforced by the splendid presentations found in the literature of the Life Extension Institute. It is proper to make special acknowledgment also to the published addresses of Dr. E. L. Fisk, Director of Hygiene, Life Extension Institute, whose ideas and illustrations are used freely in this paper.

My opening paragraph is a direct quotation from Dr. Fisk: "As a man's hair whitens and his features become furrowed and his back bent, we say he shows the marks of time." Time, however, has nothing to do with such changes. Says Dr. Fisk: "Man is not chased to the grave by an absurd old man with a scythe and an hour glass, but by myriads of microscopic enemies, by streptococci, largely, and spirochtes and pneumococci, and others of that ilk."

While one may not hold out the hope of earthly immortality, we do claim that immortality of the human body involves no negation of biologic law or fact. Let us look briefly at this proposition. As a teacher of physiology, this writer for many years, in an endeavor to find a satisfactory answer to the question, "What is life?" finally settled upon this basic fact, that life is an internal response to external conditions, a continuous adjustment of internal relations to external relations, and not a period of activity preordained to cease within a given time regardless of external conditions.

This idea seems to be borne out by Carrel's brilliant experiments with living tissue. He cut a fragment of tissue from the heart of an embryo chicken and placed it in nutrient media, washed it in Ringer's solution and, by repeating the process periodically, of furnishing nourishment and washing out the poisons of products of waste, apparently protected these tissues from the usual process of degeneration and old age. We may assume that the cells of the human organisms are capable of similar control, if we only had the knowledge and facilities to bring about the perfect conditions that have been possible in Carrel's experiments.

The simple formula that may be derived from these experiments and made applicable, although in an imperfect way, is that the life of tissues and the life of the human organism may be prolonged by protection from:

1. Injury or strain,
2. Starvation,
3. Chemical poisons, and
4. Bacterial attacks.

Sir Clifford Allbutt, in writing of angina pectoris and diseases of the blood vessels, says of senile arteriosclerosis: "It it immedicable; we can not hold time by the wings; and with some men time flies faster than with others." Fisk says: "It is the activity of certain lethal agencies that brings on old age and death, and in so far as we can put in motion other activities to meet and neutralize them, in so far shall we hold back the 'wings of time,' to indulge in symbolism; or, to use language derived from ordinary scientific observation, protect the cells of our bodies from injury or strain, from poison (whether formed internally or externally), from starvation, from bacterial attack. That is all there is to the 'wings of time.'"

The study of preventive medicine has

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thrown diseased conditions into two great groups: first, the so-called communicable diseases that are responsible for the majority of deaths in the earlier periods of life; and, second, the degenerative diseases of the heart, the kidneys, the arteries, that cause the death of most people beyond forty years of age.

It is an interesting and rather curious fact that in the battle against this first group of diseases the United States leads the world in the vigor and success of its campaigns. United States health officers have taught Germany the principles of sanitation. They have shown France that Panama could be made habitable to white man and they have sent expert aid in response to England's call for fighting bubonic plague. Under the efficient measures adopted in this country, deaths from all of these communicable diseases have declined in the last thirty years. On the other hand, we have fallen behind the enlightened countries of Europe in the matter of dealing with the degenerative diseases. In England, Wales, Prussia, France, Italy and Sweden there has been a gradual decline in deaths from the degenerative diseases. In our country there has been an increase of 41 % in the last fifteen years. The statistics in our country are forcibly set forth in a census announcement released for publication in the afternoon papers only last Saturday, November 11, 1916.

"Washington, D. C., Nov. 11, 1916.

"According to a preliminary announcement with reference to mortality in 1915, issued by Director Sam L. Rogers, of the Bureau of the Census, Department of Commerce, and compiled under the direction of Mr. Richard C. Lappin, Chief Statistician for Vital Statistics, nearly one-third of the 909,155 deaths reported for that year in the 'registration area,' which contained approximately 67 % of the population of the entire United States, were due to three causes: heart disease, tuberculosis and pneumonia; and nearly two-thirds were charged to twelve causes: the three just named, together with Bright's disease and nephritis, cancer, apoplexy, diarrhea and enteritis, arterial diseases, diabetes, influenza, diphtheria, and typhoid fever.

"The deaths from heart disease (organic diseases of the heart and endocarditis) in the registration area in 1915 numbered 105,200, or 156.2 per 100,000 population. The death rate from this cause shows a marked increase as compared with 1900, when it was only 123.1 per 100,000. The increase has not been continuous, the rate having fluctuated from year to year.

"Tuberculosis in its various forms claimed 98,194 victims in 1915, of whom 85,993 died from tuberculosis of the lungs. The progress made in the prevention of this dreaded malady during recent years has been most gratifying. In only a little more than a decade, from 1904 to 1915, the death rate from tuberculosis in all its forms fell from 200.7 to 145.8 per 100,000, the decline being continuous from year to year. This is a drop of more than 25 %.

"Pneumonia (including bronchopneumonia) was responsible for 89,326 deaths in the registration area in 1915, or 132.7 per 100,000. This rate, although lower than for most of the years from 1900 to 1911, inclusive, is higher than for 1912, 1913, and 1914. The rate for 1914, 127 per 100,000, was the lowest on record. The death rate from this disease, like that from tuberculosis, has shown a marked decline since 1900, when it was 180.5 per 100,000. Its fluctuations from year to year, however, have been pronounced, whereas the decline in the tuberculosis rate has been nearly continuous.

"The only remaining death rate higher than 100 per 100,000 in 1915 was that for Bright's disease and acute nephritis, 104.7. The total number of deaths due to these maladies in 1915 was 70,500; of this number, 64,480 were caused by Bright's and 6,020 by acute nephritis. The mortality rate from those two causes increased from 89 per 100,000 in 1900 to 103.4 in 1905, fluctuated more or less between 1905 and 1912, and has shown little change since the last-mentioned year.

"Next in order of deadliness come cancer and other malignant tumors, which caused 54,584 deaths in 1915. Of these, 21,221, or nearly 39 %, resulted from cancer of the stomach and liver. The death rate from cancer has risen from 63 per 100,000 in 1900 to 81.1 in 1915.

"Apoplexy was the cause of 53,397 deaths, or 79.3 per 100,000. The rate from this disease has increased gradually with occasional slight declines since 1900, when it stood at 67.5.

"Diarrhea and enteritis caused 48,325 deaths in 1915, or 71.7 per 100,000. This rate has shown a marked falling off in recent years, having been 90.2 in 1913 and 79.4 in 1914; and has declined very greatly as compared with the corresponding rate for 1900, which was 133.2. Nearly five-sixths of the total number of deaths charged to these causes in 1915 were of infants under two years of age.

"Arterial diseases of various kinds—atheroma, aneurism, etc.—caused 15,685 deaths in 1915, or 23.3 per 100,000. This rate, although somewhat lower than the corresponding ones for 1912 and 1913, is higher than that for 1914, and is very much higher than that for 1900, which was 6.1.

"Diabetes was the cause of 11,775 deaths, or 17.5 per 100,000. The rate from this disease has risen almost continuously from year to year since 1900, when it was 9.7 per 100,000.

"Influenza caused no fewer than 10,768 deaths in the registration area in 1915, the rate being 16 per 100,000. The rate from this malady, which fluctuates very considerably from year to year, was higher in 1915 than during several years preceding, but was somewhat lower than the average between 1901 and 1910.

"No other epidemic disease produced a death rate so high as 16 per 100,000 in 1915. The fatal cases of diphtheria and croup—which are classed together in the statistics, but practically all of which are of diphtheria—numbered 10,544, or 15.7 per 100,000, in that year, the rate having fallen from 43.3 in 1900. This decline of more than 60 % is relatively greater than that shown by any other important cause of death except typhoid fever.

"The mortality rate from typhoid fever has shown a most gratifying and remarkable decline since 1900, having dropped from 35.9 per 100,000 in that year to 12.4 in 1915, the decrease amounting to nearly two-thirds. This decline is greater, relatively, than that shown from any other important cause of death. The total number of deaths due to typhoid fever in 1915 was 8,332. Improved methods of sanitation, including the betterment of water supply and sewerage systems, the campaign against the fly, and other preventive methods, have proved their efficacy in a striking manner by a reduction of almost two-thirds in the typhoid death rate during the period covering but a decade and a half."

One naturally asks why so much attention is given by the public in general, and by health authorities in particular, to the one group of cases and so little comparatively to the other. The answer is not easy, unless it is due to the fact that it is only within the past few years that any protest has been raised against premature deaths from chronic diseases.

When a death from typhoid occurs we readily say that it is a death that ought to have been prevented. We search out and usually find the source of infection, and by removing that avert further disaster and warn the public against the dangers, the enemies lurking in that locality.

When a man of forty-five dies of heart disease or nephritis, we shake our heads at the mysterious Providence that has carried off a useful man in the prime of life. When a man past sixty dies of such maladies, we accept it as a natural termination of life that has reached the scriptural age of three score and perhaps a little more.

What I wish to emphasize in this paper is that all such deaths are due to tangible causes, and it is our duty to apprize the public of this fact and to study diligently the nature of these causes which are admittedly often obscure and difficult to find.

Fisk happily compares the attacks of man's microscopic enemies to what in current war-phraseology are described as "drives." These drives of the infectious diseases have been met with increasing success. Yellow fever and plague have been driven practically beyond the lines. Typhoid fever, tuberculosis and others are still within our lines, but they, too, have been driven back and routed from the first line of trenches and are now scampering for shelter in the second and third lines.

Another line of attack called "nibbling" by the French, we are not meeting successfully in this country. The nibbling of focal infection in decayed teeth, diseased tonsils, narcotic and other poisons, intemperate food habits, physical and mental strain. These do not produce the immediate effect found in the communicable diseases, but they weaken our defenses and often in later years bacteria lurking in hidden recesses come forth to shorten the span of life.

The practical question for us to consider today as physicians and publicists is how are we to meet the conditions as found? How influence the public mind? And how change the practice of our medical art so as to modify and limit the ravages of disease andt he disastrous results of degenerative conditions as found in the latter half of life?

Systematic writers as already referred to summarize the general line of prevention as follows:

1. Eugenics;
2. Periodical examination for the purpose of detecting physical impairment, especially foci of infection, and also errors in living habits or faults in heredity, which suggests important modifications of occupation or living habits; and
3. The application of the principles of personal hygiene.

As to eugenics, it is right and proper for the good of our race, and looking to the betterment of mankind in the future, that we should advocate and advise only such conditions for the propagation of mankind as will lead to higher types of physical and mental development.

For the immediate present, however, we are more concerned with the question how we ourselves, our patrons, and mankind in general may be brought to those conditions which will bring about better, happier and longer lives.

The writer has often scanned the tables of actuaries and trembled when he noted the limited number of years allotted to him by these tables. Let any physician seriously consider these calculations with reference to himself or to any of his patrons, and I am sure that we will all turn with eager and thoughtful search for any and every measure that will tend to increase the number of years allotted to each of us.

Moreover, with a view to preventing the early inroads of disease and the secret implantation of infections that may later on arise into activity and cause serious damage, it is incumbent upon every practitioner to keep his patients and patrons in the highest state of vitality possible, and with freedom as far as possible from any occult or latent infections.

I would strongly urge, even in the absence of known or apparent disease, the rigid, systematic and regular examination of the habits of life and the physical condition of every one who has reached the age of forty years or beyond. And this examination should be repeated at least once a year.

In making these examinations, one should be guided by the methods of the Life Extension Institute rather than by the principles of insurance examinations. This means that the fundamental factors already referred to should be taken into account, namely:

1. Injury and strain. Are there any conditions existing that are likely to lead to physical injury, mental or physical strain.

2. Starvation and food supply. Is nourishment of the proper quantity furnished and of a quality that is well-balanced to meet the demands of the system and not too much?

3. Poisons. Are the poisons manufactured in the system in the form of waste material carried off promptly and without injurious changes or re-absorbed into the tissues? Are any poisons, narcotics or other chemicals introduced from without which are calculated to injure the tissues of the body?

4. Bacterial invasion. Is there any general chronic infection, or any focal infection dealing out poisons slowly but constantly, leading to degeneration and early death?

5. Existing disease of any of the vital organs, its nature and extent.

With reference to all of these causative factors, there are four periods of slowly developing disease to be considered:

Tendency	Incipient	Well Developed	Incurable
Preventable	Curable	Fatal results	Deferrable
If discovered in time.		Varying periods of time by medical treatment and guidance.	

It is my purpose to show a few lantern slides, illustrating these various periods of development.

I shall not present a slide of the first period illustrating those whose habits of life and conditions present a tendency to these diseases. Indeed, if I were to ask each one of those in this audience who is past the age of forty years to go home and look into his mirror, it is pretty sure that he would see a reflection of the individual who could properly be placed in this class. Statistics gathered by the Life Extension Institute among laborers and commercial workers, all supposed to be in good health, indicate that less than 1 % of those examined were free from defect either of body or of habits. About 2 % were found free of physical defects.

I shall show a slide of one case of incipient organic disease that seems to be cured by appropriate treatment, and I shall show also illustrations of well-developed and incurable cases in which the fatal results had been deferred by appropriate treatment and guidance.

And lastly I shall show the pathological exhibit taken from a man who died in the prime of life who was a magnificent specimen of manhood, but who came to an untimely end because he failed to observe the fundamental principles above outlined.

The question ultimately comes home to each and every one of us, and quoting from "How to Live," "Personal hygiene thoroughly carried out implies high ideals of health, strength, symmetry and beauty; it enormously increases the capacity to work, to be happy and to be useful; it

develops not only the body, but the mind and heart; it ennobles the man as a whole."

"So, after all, it is better life rather than longer life that we are seeking."

DISCUSSION

Dr. L. H. Crow, Athens, Ga.—I would just like to say that I can not resist the temptation to say that I think the greatest opportunity and the greatest work of the physician today is in preventive medicine, and the greatest work of this Association is the section on the prevention of the spread of disease. That is not only true of this Association, but every association in America today.

There are just two things that Dr. Munroe's paper made me think of while listening to him read. One is the fact that we are doing excellent work in preventive medicine and very poor work in the denegerative diseases. We have taught our friends "across the lake," as he says, something about preventive medicine, but we are far behind them, as the statistics given by Dr. Munroe this evening will show, in the way of taking care of the degenerative diseases. Just those two things I wish to call to the attention of the Section and to emphasize the fact that we are doing good work in preventive medicine, and we are going to do greater work in preventive medicine than we have ever done; we are beginning, but while we are working at prevention we want to look to the care of the degenerative conditions and see if we can't do a little bit better work and compare more favorably with the older countries along that line.

Dr. Willis Walley, Jackson, Miss.—I would like to commend Dr. Munroe's excellent paper because the facts he spoke of are becoming very well known. After all, the great educator is the public health man who has thereby included the important aspect of preventive medicine—I don't know whether this Section contemplates that question of personal hygiene. But as a matter of illustrative convenience, it might be desirable to consider carefully the expediency of taking in hand the dissemination of knowledge about what I prefer to call the deteriorative diseases rather than the degenerative diseases.

I would go further than Dr. Munroe and say when a man has a mild deterioration shown by his heart, and perhaps a slight leak, when he has already a sclerosis of the blood vessels, a low specific gravity in the urine and occasionally casts in the urine, possibly, an examination will show you that it is too late, not that you can't prolong the life of that man for many years. We can prolong his life with full efficiency if the diagnosis of such cases was made before the development of the deterioration of the arteries and before there are casts in the urine, that being another question, and the general practitioner pays as much attention to metabolic disturbances as he now pays to minor and major surgery.

The controversy which has been waged in the last several years about the etiology of these conditions is very unfortunate, more especially that which is concerned with blood pressure, the misunderstandings, misinterpretations, misinformation, contrary statements made with apparent authority have simply tended to puzzle the minds of the general practitioners. It is a great pity that a few very simple experimental facts can not be kept before them as a profession, such facts as those of the Southern physician, Dr. Eustis, who spoke today.

Dr. J. P. Munroe (closing).—I had intended to show some slides, some pictures borrowed from the New York State Board of Health and some from my own practice, in an endeavor to impress upon ourselves and any of the public that might happen to be present or might happen to see them, the importance of these things' being considered. Unfortunately there are no facilities in this hall for using the Lantern. There are a great many people who do not know they are sick at all, who don't know they have any habits that are tending to disease. Let those people know they are tending to disease, rectify their habits, rid them of the poisons that are injuring the arteries, the heart and the kidneys, make them turn round and walk in the other direction, and from then on they will be perfectly well and lead sane and perfect lives. And then, again, incipient cases—we see them every day; these incipient cases, I am sorry to say, sometimes go to the physician and the physician doesn't see any very evident cause of disease and slaps him on the back—"oh, you're all right, go on"—doesn't even examine his urine, doesn't take a blood pressure, gives some ordinary directions about diet, "drink some mineral water"—perhaps some of the very worst that could be given. But let that patient be thoroughly examined and corrections made and the habits of life improved and that patient will be absolutely cured. All of the other cases—we can do nothing for them. I have a man in the hospital right now that belongs to that group. More than a year ago he had a pain in this region (the chest). Unfortunately, his physician called it intercostal neuralgia. Later on he developed shortness of breath and he thought it was indigestion. He was a little afraid it was something that ought to be investigated, but he gave him some little medicines for it, but finally said: "Perhaps you had better go and get Dr. Munroe to examine you." What did I find? I found he was in an advanced stage of a condition of the heart that was absolutely irremediable.

It is our duty to our patrons to insist upon the fact that when a man passes the middle period of life, he mustn't lie down to die because he feels a little pain about his heart. Ascertain the causes and remove them and after you have done that carry him along and let him live just as long as possible.

NOTES FROM A MALARIA SURVEY: IMPOUNDED WATERS, BITING OF A. PUNCTIPENNIS ON PORCHES, DISTANCE OF FLIGHT OF A. QUADRIMACULATUS

By J. A. LePrince,
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and
T. H. D. Griffitts,
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That A. punctipennis can convey malaria is proven. To what extent, as compared with other species, it is, in nature, a factor in this conveyance, has not been worked out. As its house-visiting and feeding habits would necessarily affect its role as a vector, this note on these habits of this species contrasted with those of A. quadrimaculatus may be of interest. The observations were made incidentally during the course of surveys investigating the influence of impounded waters on the incidence of malaria.

The note on the distance of flight of A. quadrimaculatus is, we think, both interesting and important.

BITING OF A. PUNCIPENNIS ON PORCHES

Few observations regarding A. punctipennis' biting man in residences have been recorded so far as is known to us. In observations made in various parts of Arkansas, Alabama, Mississippi, Georgia, North Carolina, South Carolina and Virginia—in territory thickly infested with both that species and A. quadrimaculatus—we have noted that a large number of gorged specimens of the latter are to be found in bedrooms each morning, while the occurrence of a gorged A. punctipennis is relatively rare.

It had been observed, however, in the same regions that A. punctipennis frequently bites persons sitting on the house porches in the evening and at Parr's Shoals and Blair's—both on Broad River, S. C.—and at Fort Lawn, Catawba Junction, Stevens' Creek and Roper's Farm (near North Augusta) all in the same state, and at Badin, N. C., observations to determine the species biting on the porches were made by several observers. They covered a number of nights at these places and lasted during several months of last summer. At all of these places, except Badin, biting on the porches was quite free.

The results at all of these places were the same: the only Anopheles observed to bite on porches were punctipennis. If quadrimaculatus did bite on the porches it was not observed. Yet at Parr, Fort Lawn, Stevens' Creek and Roper's quadrimaculatus were abundant and bit freely indoors. They were present at the other places, but were scarce. No punctipennis were observed biting inside the house.

From a single observation no deduction can be drawn, yet possibly the following may be correlated with some made on the Isthmus in which A. tarsimaculata showed repugnance to feeding in the light. At Catawba Junction, with three observers on the hotel porch,—one exposed to full moonlight, one in semi-shade and one on shaded side of porch,—the last was bitten most frequently and when he moved into the semi-moonlight shade was bitten less frequently. The observer in the semi-shade, while being bitten on the arm, slowly twisted the arm around to bring the feeding mosquito into the full moonlight, when it immediately stopped feeding and left his arm. Other biting was done by this species of mosquito, generally selecting a point of attack on the light-shaded side of the person it bit. Of 11 mosquitoes which bit the observers all were A. punctipennis. Just previous to the examination to determine species, the party had recorded 10 bites, but the species were not observed.

The conditions in residences and outhouses examined in the daytime were the same as had been found during the last two years (Southern Medical Journal, August, 1916, p. 708). Residences were examined: 145 interiors and 106 on the underside.

In 91 of these houses 1,379 A. quadrimaculatus were found.

In 21 of these houses 41 A. punctipennis were found.

Under 30 of these houses 126 A. quadrimaculatus were found.

Under 47 of these houses 209 A. punctipennis were found.

These examinations were practically all made during the hot weather of midsummer. At all houses examined breeding places of A. punctipennis were closer to residences than those of A. quadrimaculatus.

The "catches" for "stained" Anopheles are not included in the above. They are:

In houses 859 A. quadrimaculatus and 6 A. punctipennis.

In outhouses (barns, stables, chicken houses, etc.), 1,058 A. quadrimaculatus and 27 A. punctipennis.

In these sections the production of A. quadrimaculatus was profuse, but far less profuse in proportion to that of A. punctipennis than the above figures would indicate. They (A. punctipennis) were found here in fair numbers in hollow trees, under low bridges, culverts, etc., their preferable resting places.

These observations were made during the hot months. Some observations by Taylor and Griffitts, in 1915, and by Mitzmain, in 1916, show A. punctipennis in residences more commonly in the cooler months of spring and fall. The latter, working at Talladega Springs, Ala., from September 18 'till November 15, found the ratio of punctipennis inside dwellings to those under them 40 % (26 to 65) as compared with 19.6 % from the general collection of 1916 (see previous page) or 5 % in 41 houses at Talladega Springs in August and early September in 1915 (Southern Medical Journal, August, 1916, p. 708).

DISTANCE OF FLIGHT OF MALARIA-BEARING MOSQUITOES—ANOPHELES QUADRIMACULATUS: AN OBSERVATION AND EXPERIMENT

The question of the distance of flight of the Anopheles mosquitoes is probably the most important field problem of malaria yet unsolved. The following observations will throw light upon this problem for one species, Anopheles quadrimaculatus. Naturally, it must be studied for each species separately.

A study was made of the country on the east side of Stevens' Creek, South Carolina, about 12 miles from North Augusta. No place suitable for breeding Anopheles quadrimaculatus was found except the pond of Stevens' Creek. Larvæ were collected from streams and pools subject to overflow in freshets. All imagos developing were Anopheles punctipennis.

Previous investigations (1915) had shown: (1) that the pond in one section was a prolific source of Anopheles quadrimaculatus, (2) that a more or less heavy infestation of residences and barns, etc., with Anopheles quadrimaculatus existed in the general vicinity of this pond; and (3) that the number of these mosquitoes in such houses was relatively smaller the further away from this breeding place they were situated. From those facts it was believed that the source of Anopheles quadrimaculatus found in the houses mentioned was mainly, if not entirely, this part of the pond which was producing so freely.

Houses 1⅛ miles (really 1 1/22 miles) distant from the pond were practically free from Anopheles quadrimaculatus and they were not present so as to be of sanitary importance at a somewhat less distance. This, then, was considered as approximately the limits of flight for this species under the conditions which obtained here in July and August, 1915, and 1916. At this time the production was *extremely* profuse,—good summer temperature, country rolling, but not high and in general rather open. Many valleys run up from the pond, the banks of which were wooded, some distance into the open country. We have thought from observations made elsewhere, but which are not determinative, that this species follows such valleys from its breeding place further than across higher land.

It was determined, however, to conduct experiments here to determine definitely the distance of flight from its breeding place of individual mosquitoes of this species. These were planned on the same lines as those carried out at Gatun, Canal Zone, by one of the writers, with Anopheles tarsimaculatus: to catch a number of mosquitoes near their breeding place, mark them, release them and look for them in all the houses, barns, stables, etc., in the neighborhood.

Mosquito bars were hung up in the wood or the creek bank, the bottom being 3 to 4 inches from the ground. One or

two persons remained under each net as bait. It is interesting to note that only a small percentage of the Anopheles entering the net attempted to bite its inmate. Yet, when he left the net many of the insects would leave also. When a sufficient number had entered, and they were very abundant, the lower portion of the net was gathered close around the legs and the body of its inmate so as to collect the mosquitoes in the free space near the roof of the net. They were then sprayed lightly by means of an atomizer with a 1% aqueous solution of eosin. They were then turned loose, the net was again "set," and the process repeated as often as one had patience and could stand the biting. It was continued here for two nights.

All the houses and outhouses in the neighborhood were examined very carefully for 10 days, using electric flash lights and catching bottles. But a small proportion of mosquitoes escape a careful search. The "catch" each day was spread out, each mosquito to herself, on a plate of glass resting upon a sheet of paper. On each insect is placed a drop of "solvent" (alcohol, chloroform and glycerine) which, the moment it touches a stained mosquito, shows "color." The speck of stain on the mosquito is usually too small to be visible to the eye, but when touched by the solvent all doubt of the presence and color of the stain vanishes.

A total of 1,542 mosquitoes were taken and examined, and of these four (4) female, Anopheles quadrimaculatus, showed the stain.

They were taken:

One at a barn (near residence) 5,565 feet from liberation station.

One at a barn (near residence) 2,800 feet from liberation station.

Two at a barn (near residence) 3,245 feet from liberation station.

These four mosquitoes must actually have flown the above distances. The first was taken on the third day after the first liberation (a smaller batch) and, of course, the second day after the second liberation. The second one on the fourth day and the other two on the sixth day.

An experiment for the same purpose was made at Fort Lawn, S. C. The insects were secured, however, by the use of the Griffitts trap collecting device, making the catches in houses and barns in the day time. About 300 Anopheles (9/10 quadrimaculatus and 1/10 punctipennis) were taken in a barn and two houses on the west side of the Catawba River, carried across the river, stained and liberated. Three stained specimens were taken all in one of the houses from which the greater portion of the "catch" was originally made. Two were taken in 72 hours and one the next day. This house was 3,090 feet from the liberation station. If the flight were in a direct line, the river was over 800 feet wide where crossed.

Does the recovery of these three insects, all in the house from which the greater number of the "catch" was taken, imply a "homing" instinct, that this Anopheles returns to the place where she has fed to feed again?

It would be easy enough to test by using different stains for the batches caught in different houses.

WHAT THE SOUTH IS DOING FOR THE CONTROL OF CANCER*

By Curtis E. Lakeman,
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If a layman is to discuss cancer, even by invitation, before a professional audience, it is perhaps wise that he should confine his remarks to the educational, statistical, and administrative aspects of the problem. Within these limitations it may serve a useful purpose to review some of the methods recommended by the American Society for the Control of Cancer in developing a nation-wide campaign against this disease, and to point out some typical instances of co-operative activity in Southern states.

It is unnecessary to review at length the history and theory of efforts for the reduction of cancer mortality through the education of the public. In substance, these efforts are directed to the elimina-

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tion of the often fatal factor of delay between the time when symptoms are first observed and the time when the patient receives the best treatment which modern knowledge makes possible. Statistical evidence is plentiful that this period of delay runs from a few weeks to several years and in the average of a large number of cases covers at least twelve months. In the general view, the responsibility for the delay seems to be divided between the patient and the doctor. In some cases one is to blame, in some cases the other, and often both share the responsibility. Broadly speaking, educational propaganda must therefore be directed both to the public and to the backward members of the profession. Direct efforts in the latter field are the special province of medical societies, medical journals and medical education in schools and hospitals. Yet, no matter how well trained the doctor may be, he can do nothing for a patient who conceals the symptoms of cancer. So the attempt must be made to carry directly to the people the message of hope of permanent relief from this affliction which is possible if the disease be attacked in its early stages.

HEALTH DEPARTMENTS

In a paper which the writer had the honor of preparing for your meeting at Dallas, last year, the attempt was made to state somewhat fully the reasons which seem to warrant the intervention of public health officials in the war against malignant disease. On the face of the statistical returns public activity for the reduction of cancer mortality certainly needs no justification. A much broader view of the function of the public health authorities is now beginning to prevail, and nowhere more notably than in the South. The supervision and control of the common infectious diseases and the suppression of unpleasant though often innocuous nuisances are no longer held up as the chief end and aim of the health officer. The scope of the term "preventable disease" is constantly enlarging and the activity of state and city boards of health in educating the public now embraces more and more of the domain of personal as well as public hygiene.

With this new attitude many an energetic health officer might like to begin at the top of the list of the chief causes of death and consider what he can do to reduce the power of each and all of these ancient enemies of mankind. Still contending for first place, though hard pressed for it, stands tuberculosis with a specific death rate in the United States Registration Area for 1913 of 147.6 per 100,000 of population. The entire group of organic heart diseases is a close second, with a rate of 147.1. Third comes pneumonia in all its forms, showing a rate of 132.4. Nephritis and Bright's disease account for 102.9 deaths out of every 100,000 living and next comes cancer with a specific death rate in that year of 78.9. Infant diseases and apoplexy also rank high, but it is striking that as compared with these half-dozen diseases, all of which exhibit death rates of approximately 75 to 150 per 100,000, the common infectious diseases, including measles, scarlet fever, diphtheria, whooping cough and typhoid fever had death rates in that year in all cases below 20 per 100,000. After studying the census tables which show the relative importance of causes of death, a layman might well get the impression that the public health movement in this country began at the wrong end, and that the balance did not begin to be restored until the organization of the crusade against tuberculosis, the first and greatest cause of death, was undertaken about ten years ago. That reasoning would not be altogether sound, yet having mastered such a disease as diphtheria, the public health officers of the country may reasonably be expected at least to consider whether they can not do something about cancer, which causes exactly four times as many deaths.

It is true that we do not know the cause of cancer in the sense that we know the cause of diphtheria. This is not to say, however, that we do not know a great deal more than is sometimes realized about the conditions under which cancer begins, how it may be extirpated by modern surgery and how it may even be prevented by the treatment or removal of chronic irritations, persistent sores and other so-called precancerous lesions. Above all, we know, and the public ought to know, how much greater is the hope of permanent relief if cancer is treated in the early stages. Why should not health

departments regard it as their opportunity and duty to diffuse this knowledge through all channels at their command? Why should not the state provide laboratory facilities to assist physicians and surgeons in the earliest possible recognition of malignancy, enabling them to reach a prompt decision regarding border line cases? Certainly health departments and registration officers can and should contribute to the search for the cause of cancer by making every possible effort to improve their mortality statistics with respect to accuracy and detail. Incidentally laboratory diagnosis will contribute definitely to the accuracy of the mortality returns.

To consider first the educational side, health departments can disseminate the facts about cancer by publishing articles in their monthly bulletins, by giving occasional statements to the newspapers, by printing and distributing special circulars, by displaying exhibits, and by including this subject in their courses of public health lectures. Health officers are not asked to devote an unreasonable amount of attention to this subject, but merely to give it appropriate consideration in state and local campaigns of education in which they take the initiative. All of these ways in which health departments can contribute toward the control of cancer may best be discussed in the form of concrete comment upon what various Southern states are actually doing.

The Kentucky Board of Health is on record as one of the pioneers in the field of cancer education. A vigorous popular article by Annette Austin was published in *The Delineator* for October, 1912. By permission of the editor the article was promptly reprinted and issued in December, 1912, in the *Monthly Bulletin of the Kentucky State Board.* The publishers of *The Delineator* co-operated by furnishing a first edition of 25,000 copies for free distribution. A recent letter from the Secretary, Dr. A. T. McCormack, indicates that the *Bulletin* is still circulated in Kentucky and has been made the occasion of repeated comment and quotation by the newspapers.

At the suggestion, apparently, of Dr. Southgate Leigh, the South Carolina State Board of Health published a bulletin on cancer in April, 1911, which was closely followed by a similar pamphlet issued by the Virginia department in May, 1911. These bulletins also are still distributed to the public, though revised literature will probably be issued in the near future.

In Kansas the State Board of Health has co-operated with the Committee on Health and Public Instruction of the State Medical Society in publishing a cancer pamphlet which includes a reprint of the notable article by Samuel Hopkins Adams as originally printed in the *Ladies' Home Journal* at the instigation of the Cancer Committee of the Clinical Congress of Surgeons. This bulletin also contains the Kansas Committee's own statement of its advice to the public and a list of approved articles in popular magazines. Dr. Crumbine, of the Kansas State Board, is a member of the State Medical Society Committee, and this bulletin, distributed jointly by the two agencies, must undoubtedly have had a widespread effect in educating the people of Kansas about this disease.

Of the departments which have more recently devoted attention to this subject, the State Board of Health of North Carolina deserves special mention. In February, 1915, it published a special bulletin No. 37, entitled "Cancer and What You Should Know About This Disease of Middle Life and Old Age." This was revised and issued in a second edition in December, 1915, as special bulletin No. 60. In a short pamphlet of four pages there is presented an effective discussion under such headings as "What Cancer Is," "How to Know Cancer," "How to Prevent Cancer," "Fake Cancer Cures," etc., and the circular ends with a commendable attempt to present the optimistic side of the cancer problem. It can not be overemphasized that too much of the unnecessary fatality of this disease is due to the prevailing attitude of pessimism which regards a diagnosis of cancer as equivalent to a sentence of death. This feeling results in immediate despair and surrender when prompt recourse to competent professional advice might save many a patient.

In the direction of stimulating effective newspaper publicity, the example of the State Health Commissioner of Oklahoma deserves study and imitation. Dr. Duke's department has issued several press bulletins on cancer, supplying these statements

to four or five hundred newspapers. On April 5th of this year an extended article filling about a column of newspaper space was sent out, and on other occasions shorter notices on cancer have been included with other health articles going to the newspapers of the State. When an eminent Chicago surgeon, since deceased, addressed the Medical Association of the Southwest, at Oklahoma City, the Health Department took occasion to summarize his address on cancer in a press bulletin, which was an admirable example of the right way to send timely material to the newspapers. The instance is given as illustrating how an alert health department can take advantage of occasional opportunities for educational publicity. When a speaker whose national reputation gave command of extended newspaper space came along with something worth hearing, the Oklahoma department saw to it that this health sermon reached not merely the professional audience but thousands of readers of daily newspapers throughout the State.

Effective newspaper publicity work has also been done in Georgia, Mississippi, North Carolina and other Southern states. The educational department of the Georgia State Board is preparing a series of press bulletins on cancer, the first of which was issued for publication during the week of July 2, 1916. This contained eighteen short sentences giving the general facts about cancer which the public should know. Succeeding articles discuss particular forms of the disease.

All state health departments and the larger city boards are on the special mailing list of the National Society to receive the press bulletins and circulars which it issues from time to time. Health departments are of course at liberty to re-issue this material, combining it with local statistics to make up their own press articles. In general, the prestige of the state health department seems to insure unusual cooperation on the part of editors and therefore a valuable opportunity for the diffusion among the people of the chief facts about cancer. It is encouraging to observe the success which has attended the efforts of several state and local health officers in this direction and the importance of this method of reaching the public should be appreciated even more widely.

In the exhibit trains which Southern state boards have developed as their original contribution to the public health movement is to be found another opportunity of reaching the public with the facts about cancer. Through the display of charts, the distribution of circulars and the giving of stereopticon lectures the departments operating such trains have a powerful means of carrying the message of health to the people in their homes. Dr. Dowling advises that the literature of the National Society has been distributed from the Louisiana train, every woman who entered the car being given one or both of two leaflets dealing with cancer. This example has been followed in Florida and other states.

The Cancer Control Society and its advisory committees are at the service of all state and local health departments. Exhibit charts are in preparation; literature, lecture outlines and a growing collection of lantern slides suitable for lay audiences are already available. Copy for cancer circulars will be prepared or reviewed and statistical and other data supplied for monthly bulletins and press articles. In particular, a standard cancer circular, similar to the admirable bulletin on consumption recently prepared by the National Association for the Study and Prevention of Tuberculosis will shortly be issued under a like plan of co-operation with the Council of Health and Public Instruction of the American Medical Association. By this method a bulletin approved by the foremost authorities on cancer will be made available at the minimum cost of printing to all health boards and private organizations which will undertake its local distribution.

NURSES

The role of the nurse in the campaign against cancer falls both within and without the province of the health department. The value of the public health nurse as a field agent under the direction of the health officer is every year more widely recognized and women have apparently entered this field of health work to stay. Whether acting as a representative of the health department, or on behalf of a community association or charitable agency, or even when on purely private case duty, the intelligent nurse may often have op-

portunity to give the essential advice about cancer. She enters the family as a welcome messenger armed with expert knowledge about the care of the sick and the prevention of disease. As a woman, she will often be consulted about disturbing symptoms by women who hesitate to go to their doctors. She can therefore effectively instruct people, especially women, with whom she comes in contact, whenever they bring to her attention anything that she knows is a warning signal of the insidious approach of malignancy. Then she must exercise her tact and the superior power of knowledge in getting the right thing done. She must in no case make a diagnosis, but she must in all cases get the patient into competent professional hands at the earliest possible moment.

So the nurse must be specially taught the signs of early cancer, especially the lumps in the breast and the irregularities of function that constitute the first painless warning to the woman afflicted with this disease. For this purpose it is useless for the nurse to study the disease as she comes to know it in the hospital, in its advanced and terminating stages. She should be taught by special lectures in the training school all that is of practical importance to her about the beginning of the disease and its earliest manifestations. All the registered schools of nursing in Southern states, as elsewhere, have therefore been asked to arrange such instruction. Furthermore, each state association has been urged to consider the relation of the nurse to this field of life conservation, to take part in public meetings on cancer, and to plan lectures for the special instruction of nurses. The West Virginia Association was one of the first to respond to this suggestion. Information is not complete regarding the extent to which Southern nurses are alive to their opportunities in this field of educational work, but no chance should be lost to help them and to get their help in any systematic state or local campaign against cancer.

WOMEN'S CLUBS

Cancer causes nearly twice as many deaths among women as among men. Between the ages of 35 and 45 it kills three times as many women as men. As is well known, the excess is due to the special liability of the female organs of generation to attack by this disease. Now, cancer of the breast and uterus are perhaps the two most promising forms of the disease in respect to the possible results of educational propaganda. It has to be admitted that progress is necessarily slow against such formidable, obscure, and often inoperable conditions as are frequently found when cancer attacks the stomach, liver, intestines, and other internal organs. With accessible sites such as the breast and uterus the hope of early recognition and timely treatment is greater. Yet there is surprising ignorance among women as to the menacing significance of lumps in the breast and irregularities of menstrual functions. How many women are sacrificed annually at the height of their happiness and usefulness to their growing families because of the easy but false attribution of every kind of local disturbance to the "change of life"?

This ignorance must be removed. It must, of course, be done tactfully, and with due regard to the danger of causing a panic of needless fear. Women suffer under the prevailing psychology of pessimism about cancer. They say, "What is the use of finding out the truth about this condition? If it is cancer, it means death and nothing can be done about it." It is this despairing attitude and easy surrender that is responsible for many a preventable death. This can all be changed. Strong and earnest women must lead their sisters to the light. Nurses should help. Women's clubs are a potent agency for spreading a more rational gospel about cancer. In their health programs and study courses they can present the facts effectively and hopefully. In larger public meetings the local women's clubs should invariably be asked to take part. But their best usefulness is probably manifested in lectures to smaller groups of their own members, when a speaker of recognized standing can discuss this disease in a simple, straightforward manner and answer questions as he would in the intimacy of a class room discussion.

The General Federation of Women's Clubs, through the earnest work of the Chairman of Public Health, Mrs. Elmer Blair, a member of the New York State Public Health Council, has recently organized a new section on the diseases of

adult life. Dr. Ellen B. Smith, of New Jersey, is chairman of the department, which will plan a systematic educational campaign against cancer and the degenerative diseases incident to mature life. All state federations have already been requested by the Cancer Society to take up this subject through their committees on public health and recommend programs of study to the local clubs in every city and town. The Alabama Federation, through the active interest of Mrs. H. P. Cole and Mrs. Walton Hill, has been one of the first to respond, and has on its program today at Birmingham an address by Frederick L. Hoffman, one of the prime movers in the organization of the crusade against cancer in this country. In Louisiana, Dr. Dowling's department is seeking the aid of the Health Committee of the State Federation and other women's organizations in this effort to instruct women and get them to teach their friends about the early manifestations of cancer.

MEDICAL SOCIETIES

Aside from meetings, papers, clinics and other means of keeping the members of the medical profession abreast of the developing knowledge of cancer, it would seem that the state and county organizations properly may take the lead in local efforts to instruct the laity. Many state medical societies have appointed committees on health and public instruction. In promoting meetings and lectures for the education of the public in matters of health, it is appropriate and important that such committees see that the prevention of cancer is adequately discussed. The same is true of the activities of progressive county medical societies and their committees on public health. In connection with every medical convention there is usually some opportunity to throw open one or more meetings to the public and those in charge of such programs should remember the obligation resting upon the profession to impart to the public the essential and practical bearings of the scientific knowledge of cancer. Such a lecture was given at the last meeting of the Alabama State Medical Association, and the Atlanta committee on the occasion of this present gathering has not lost its opportunity to provide meetings for the laity on cancer and other diseases.

In several states, special cancer committees have been appointed by the state medical association and their work has been correlated with that of the National Cancer Society. This is the case, for instance, in North Carolina, where Dr. John W. Long is state chairman, and in Louisiana, where Dr. C. Jeff Miller is in charge. The Shreveport Medical Society had, for some years before the National organization was formed, a cancer committee, of which Dr. S. L. Christian was chairman, and which caused the publication of authoritative and impersonal articles in the local newspapers. Under the auspices of the joint committee in Louisiana a large public meeting was held in New Orleans last year, at which several prominent local physicians took part in a discussion of various aspects of the problem.

In Mississippi, the cancer committee of the State Medical Society reflects an apparently perfect integration of working agencies. The chairman, Dr. Leathers, is Director of Public Health of the State Health Department, and is connected with the State University, while the Committee also includes Dr. Stingily, Secretary of the State Board of Health, and Dr. Howard, Secretary of the State Medical Society. Through the publicity service of the State Health Department, an excellent article entitled "Cancer is Curable" was sent out and published in the Mississippi papers last July.

In North Carolina, the joint committee held a cancer symposium last year and has since circularized all the county societies urging them to devote at least one meeting a year to cancer. The Committee has also on several occasions obtained speakers of national reputation to address local meetings for the laity.

In South Carolina, Dr. George Tyler and Dr. Rosa Gantt, of the Committee on Health and Public Instruction, have organized local meetings in Greenville and Spartanburg, at which Dr. Bloodgood has just spoken on the way to this convention.

In Texas, an interesting experiment has been tried by Dr. L. B. Bibb in writing a series of articles on the various forms of cancer to be published in the so-called department of extension of the *State Medical Journal*. These articles

are short, simple and unsigned and are designed to be reprinted at very small cost and to answer the purpose of popular circulars to be distributed by physicians in office practice.

The cancer committee of the Texas Medical Association, under the chairmanship of Dr. W. L. Brown, made a report at the last annual meeting which recommends the appointment of a permanent committee for a term of three to five years, the duties of which are outlined in the following admirable program for a cancer campaign throughout the State:

"1. To collect all available information on the cause and prevention of cancer; to work in conjunction with the State Board of Health, in a state-wide educational campaign extending to physicians and laity; this committee, either alone or in conjunction with the State Board of Health, to collect and have printed and distributed throughout the State, both to physicians and laity, leaflets or pamphlets giving proper instructions on the early recognition of precancerous conditions.

"2. That this committee, in conjunction with the officers of the State Medical Association, extend this campaign directly to the county medical societies of this State, furnishing them information and asking that at least one meeting a year be devoted to the subject of cancer; also urging each society to begin the campaign of education in its own county or district, selecting those in the society most desirable to present the subject, in connection with municipal health boards, women's organizations, church organizations, benevolent societies, better babies shows, etc.

"3. That the co-operation of the public press be solicited, and information suitable for the laity be furnished.

"4. That special effort be made to get physicians to make proper death returns so that we may be able to study the statistics of each district, thereby being able to tell what effect the educational campaign is having.

"5. That physicians be notified that the state laboratory will make examinations of tissues of suspected cancer free of charge; also that such arrangements be made with municipal and private laboratories, of course, with the understanding that the patient is not able to pay for the same. We feel sure that no private laboratory would refuse to make the examinations if informed that patients are unable to pay.

"6. It is the opinion of this committee that such a campaign should be financed by the State Board of Health; but in the meantime all necessary financial assistance should be secured from other sources."

No account of educational work within the profession in the South would be complete without mention of the early and long-continued preaching of Dr. Southgate Leigh, of Norfolk, Va., who, as long ago as 1911 began a series of forcible papers and addresses before the various medical societies of the Carolinas and Virginia in which he dwelt upon the responsibilities of the practitioner regarding cancer, and the duty of health boards to instruct the public.

LABORATORY DIAGNOSIS

Dr. L. D. Bristol, Director of the State Health Laboratories of North Dakota, acting as Chairman of a Committee of the American Society for the Control of Cancer, which included also Dr. James Ewing, of Cornell Medical College, and Dr. F. C. Wood, of the George Crocker Cancer Research Laboratory, has recently published in the *Journal of the American Medical Association* a report of a careful survey of existing facilities for free tumor diagnosis in public health laboratories. It was found that of the forty-eight states just one-half, or twenty-four, have facilities for the diagnosis of suspected cancerous tissue either in their state public health laboratories or in some other institution. Of the twenty-four states offering such facilities five charge specified fees, six charge all persons except indigents, and thirteen make no charge. Of these twenty-four states nineteen carry on the work in their public health or hygienic laboratories, while five do the work in the state university laboratories of pathology or preventive medicine. The recommendations of this Committee, in which the Directors of the National Cancer Society thoroughly concur, are as follows:

"1. So far as consistent with local conditions, facilities should be offered under public auspices in each state for the diagnosis of tissue suspected of being cancerous. Preferably, these should be made free of charge.

"2. The logical place for the doing of such work is the laboratory of the state health department. It is not to be supposed that such work will be given the preference over other work now being done by these laboratories.

"3. To cover this work in those states which have no such facilities, additional money should be appropriated.

"4. Judgment must always be used by surgeons in the removal of suspected cancerous tissue for diagnosis, and the value of a microscopic diagnosis should appear to outweigh the risk involved before such a procedure is adopted."

In this connection attention should be directed to the great educational value of free diagnostic work. The axiom on which the entire campaign for the control of cancer in the state of our present knowledge rests is the necessity of the earliest possible recognition of the disease and the earliest possible removal of the malignant growth. It is recognized that many physicians as well as the public need to be alive to their responsibility and alert to recognize the first manifestation of the disease. What greater encouragement can be offered to the busy practitioner than to give him all necessary expert assistance in this difficult field? The oldest organized institution for cancer research in America, if not in the world, the New York State Institute for the Study of Malignant Disease, at Buffalo, has recently developed a service of free examination of specimens of tumors sent in by any registered physician of New York State. Detailed instructions for the taking and mailing of specimens to the Buffalo Laboratory have been prepared and special arrangements made to handle the work and send out reports. This service has now been in operation for over a year, and the results, according to the Director of the Laboratory, Dr. Harvey R. Gaylord, are very interesting and encouraging. Fifteen or twenty specimens a day are now being examined by a competent and intelligent assistant who has an enthusiastic professional interest in the work. Every doctor who sends a specimen receives a personal letter of report and specimens are now coming in from small towns and rural practitioners throughout the State. The confidence of these practitioners has been secured and no opportunity is lost to give helpful advice just at the time when their interest is at its height and they are considering a particular case of possible cancer regarding which they are in doubt. Even in the short time the service has been in operation the good effect seems beyond question. According to a recent report of the Director, 2,037 specimens have been examined during the two years previous to November 1, 1915. Thirty-eight per cent. of these cases were found to be malignant and analysis of many hundreds of specimens examined in the preceding ten years at the Institute showed that during that period 54 % of the specimens submitted for examination were malignant. This illustrates the gratifying change in the character of the material submitted for diagnosis. Physicians are becoming more awake to the necessity for early operation and are removing a greater number of early and border-line cases than previously.

In New York City the Health Department, with the encouragement and moral support of the Public Health Committee of the Academy of Medicine, has developed plans for a similar service in its diagnostic laboratory, and will ask for a special appropriation in order to begin this work on January 1, 1917.

It is unnecessary to dwell further upon the advantages of such service in well-organized public health laboratories and it is to be hoped that similar facilities will be extended in many of the twenty-four states which do not now examine for cancer. It must of course be recognized that the differential diagnosis of tumors is a process requiring thorough training and technic and not one to be entrusted to the ordinary routine of a public health laboratory. Maintained under proper conditions and with a competent pathologist in charge, this service promises results of the greatest value in the progressive control of malignant disease.

Among Southern states we are advised that at least Alabama, Florida, Louisiana, Mississippi, and Oklahoma offer public facilities for the examination of tissue, though doubtless the service could be made more extensive and useful in some if not all of these and other states, if appropriations were more liberal. The city laboratory of Savannah is exceptionally well-equipped in this respect. It is believed that in one way or another, by hospitals, by state universities or by health departments, competent surgical pathologists can and must be provided and the advantages of this service secured to the public.

CANCER STATISTICS

Laboratory service in cancer also makes for the improvement of the statistics of this disease by enabling the physician to certify the cause of death with

greater certainty. Probably there is no important disease in which the accuracy of the original data is so often called into question. In spite of impressive arguments as to the reality of the recorded increase of cancer, such as those repeatedly and comprehensively set forth by Frederick L. Hoffman, doubt still seems to exist in many minds as to all statistics based on the existing returns of cancer deaths. It is difficult to read Dr. Hoffman's recent book on the "Mortality from Cancer Throughout the World" without being convinced of the reality of the increase. His arguments are not based upon dogmatic assertions, but are backed up by thorough analysis of an extraordinary collection of data from all civilized countries. Nevertheless, not merely special students, but the profession at large, as well as the thinking public, should be convinced one way or the other. It is important to know the facts and to have the public form a sound opinion as to whether or not cancer is on the increase. If it is increasing all the present efforts to control the disease and still greater efforts in the future are certainly called for. If it is not increasing, the present total of deaths is still too large and should be reduced by the application of every practical effort to that end. How, then, are we to determine the facts? Certainly in large part by the co-operation of state and local registration officials with the Federal Government to secure greater accuracy and completeness of certificates of death from cancer. The Federal Census Bureau is on the point of publishing the most elaborate statistical monograph on this disease ever produced by any government. For the first time in America this report will publish separately the statistics based upon diagnosis confirmed by microscopic examination or surgical intervention or autopsy, and statistics in which the diagnosis resulted from clinical observation and judgment. According to the preliminary estimates, only about 60 % of the 52,420 deaths from cancer in the Registration Area in 1914 could be included in the "reasonably certain" group, even after extended canvassing of each doubtful case by direct letters of inquiry from the Director of the Census, some 35,000 of which were sent to American physicians. This means that approximately 30,000 deaths were either certified on the basis of clinical opinion alone or else the physician did not reply to the letter from the Census Bureau inquiring how the diagnosis was made. This proportion of "certain" cases should be greatly increased and this can be done if state and local registration officials will use diligence to promote the accuracy of returns from cancer. The American Society for the Control of Cancer has recently urged all the state registration officials as well as those in the larger cities to co-operate in the efforts of its Statistical Advisory Board to insure greater uniformity and detail in the publication of cancer statistics. It is desired that the figures be published according to age, sex and race, and with at least the detail as to organs and parts of the body affected called for by the unabridged international classification. To this end it is desirable to educate all physicians certifying deaths from cancer to specify the exact site of the disease. It is gratifying to learn today that the Cancer Committee of the Southern Medical Association has been continued under the chairmanship of Dr. Shoulders, and that it will devote special attention to the work of improving the registration and publication of cancer statistics.

DISCUSSION

Dr. J. C. Bloodgood, Baltimore, Md.—The old notion of the physician's teaching and healing apparently in modern medicine we have to a great extent forgotten, and I think that the public health departments throughout the country are specializing in the teaching, and this Society for the Control of Cancer is taking up only the teaching part. I am quite convinced that the better the teaching the less difficult will be the healing. I have had the good fortune to observe pretty carefully now through a quarter of a century a large, very large, group of cancer cases, so that I have had the opportunity and have thoroughly investigated the changes that have taken place year by year from 1889 to date. They have been grouped by years and by five years and by ten years. The impression that I get from this group, — of course it is a small group comparatively, — is that if through this propaganda teaching only we can reduce the period of time between the pre-existing lesion,—I am using the word pre-existing lesion rather than the pre-cancerous lesion because some of the pathologists object to the term,—if we simply by this teaching propaganda can reduce the period of time between the pre-existing lesion and its treatment, we shall accomplish great results.

Now, our figures show that we have advanced the time between the pre-existing lesion and the time the patient comes to the surgical clinic in Baltimore for treatment. I may dwell a moment upon figures that are apparently very accurate in detail in Baltimore. From the very beginning, there was a certain amount of teaching by Dr. Halstead and his followers to the patients themselves and to the doctors who brought patients, because up 'till about 1900 31 % of breast lesions were benign, up 'till 1901 it had increased about 47 %. Then we have the period between 1910 and 1916. In the first period there was an increase of 47 %; in the second period an increase to 59 %. Now, this increase in the last period of three years to 59 % is so out of proportion to any other previous three or any other previous ten years that it might only be explained by the general propaganda throughout the country started by Adams' articles and continued by the American Society for the Control of Cancer. Now, of course, those figures don't prove absolutely the effect of this general propaganda, but they are most suggestive, and the same is true when you put together any other group of cancer cases,—tongue, lip, skin of the face, skin of the extremities, stomach, colon. Those are the great groups that we have studied. In addition to that, even in such a small group as bone tumors, the shorter period of the duration from the time of the injury and the time of the first symptom and the time we first see the case or the first treatment is done has changed tremendously in the last two years, so that in the last two years our cases of light bone lesions have shown us that our previous study of bone lesion has left us in the rear, they have been so slow. So that, even if there were no other education but that, good results would be accomplished.

In regard to the convention of such an organization as the American Society for the Control of Cancer and the teaching particularly of the Public Health Service, I suppose you know very much more about it than I do, but when I look over the portion of cases that come to our clinic, I am surprised at the large number of people who hadn't come in contact with physicians,—that is, there is a large number of people who don't come in contact with the physicians. Therefore, even if all physicians fulfilled their duties of teaching, there would still be in this country a large number of people who wouldn't come under the influence of the teaching of graduate physicians. Now the Public Health Service comes in contact, or can come in contact with all the people, by the distribution of literature, and perhaps the greatest function of the American Society for the Control of Cancer in the future will be to stimulate the other agencies to the teaching of this group of people who don't come in contact with physicians. Then again, I know even from the records of such a hospital as Johns Hopkins that we have by no means fulfilled the duty of the physician in regard to teaching the actual patients who come to our hospital in regard to diseases that they don't have when they come. I have taken up the investigation, writing to every woman who has ever been in the St. Agnes or Johns Hopkins Hospital, no matter what her disease, looking over her history, to see whether there is any record on that history of menstrual condition or in regard to her breast, and even finding out how many women, for example, have come into Johns Hopkins for other things besides pelvic lesions who had at the time they were in the hospital the signs of cancer and it wasn't found out and she was given no teaching whatever, no information in regard to cancer. So you see that the physician himself or herself has in the past not fulfilled that function of teaching, so that the Public Health Department and this American Society for the Control of Cancer not only should teach the group of people who don't come in contact with the medical profession, but it is just as important for them to stimulate in the medical profession as a whole, whose burden at the present time is the treatment of disease, an interest in teaching as well as in preventative medicine. Now, that covers the whole ground at the present time.

One other point, in regard to facilities for the microscopic study of tissue. You would be surprised—I will not give you the figures—but you would be surprised at the number of men who remove tissue in this country who never had a microscopic diagnosis made. Now, in some of these instances, some of these men say, from my letters, they have no place to have it made; others are in positions where they could have it made, but they don't have it done. I fully agree with this Committee of the American Society for the Control of Cancer that there is no locality in this country that shouldn't be provided with a laboratory for diagnostic purposes. We need not duplicate the laboratories, and in some instances the only possibility of furnishing such a first-class diagnostic laboratory is the Public Health Department itself; and there are sufficient men in the Public Health Department that it is training men for that,—I know of our own graduates who go into public health work, they are not pathologists and not bacteriologists. I also feel that it is a distinct function of the Public Health Department to establish diagnostic laboratories that cover other than bacteriology.

One other suggestion I would like to make. I don't know how it is in all the states, but it seems to me that the diagnosis of tissue sent to your laboratory to help those surgeons who have not the facilities, to go further with the autopsies in a state should be under the control of the Public Health Department. Who appoints our coroners in Maryland? The Government. We have had six cases I can think of in the last few weeks in my clinic that were coroner's cases that we couldn't have autopsied because the Coroner said they were not necessary. I am confident that if that Coroner had been under the control of the Public Health Department we would have gotten the autopsies.

We shorten the duration of the disease. These little tumors are going to be removed, whether they are sent for diagnosis or not. I I have been giving this a great deal of study. I have been receiving letters from doctors from

all over the country for twenty-five years. That isn't such a big thing, in my experience. I may be wrong, but my theory is—I didn't want to bring it out—that's the best means of getting that information. If the laboratory does its particular diagnosis, whether it sends a negative report or not, you will find out all about that patient. If you want to test that, you send a specimen to my laboratory and you will be sorry you sent it, because you will hear from me once a year for the rest of your life, and the effort of the laboratory will soon correct those men who have no right to send tissue for diagnosis, and I am pretty anxious to get after them in that way.

Dr. F. A. Coward, Columbia, S. C.—It is a question, the problem of handling cancer, whether it is or is not a communicable disease as it is with pellagra. Of course, it is a disease which affects a large percentage of the public, and as the essayist has shown in his figures, perhaps the most of the public, from the disease standpoint, comes under the domain of public health.

I am opposed to extending to the general practitioner,—and I don't mean to be offensive when I say the common practitioner,—the opportunity of sending into our laboratory specimens for the diagnosis of cancer for a patient who afterward will be sent to a surgeon for the eradication of the disease. What does it mean? It means, in the first place, that the specimen will not be properly taken, in some cases. The fraction of an inch, the fraction of a milligram, in cutting out the section from the breast will miss the cancerous tissue and the laboratory reports go back negative and the patient will die of cancer. I think that suggestion is sufficient, and I won't go any further; but I don't think we can treat cancer from the laboratory standpoint today as we can tuberculosis and diphtheria and such things, that way. The average doctor is going to play up the laboratory end of it too far. It has a tendency which only the laboratory man combats. The laboratory man is the only one who doesn't believe his own work. He is always in doubt; it is the physician who wants the laboratory man to back him up, and I really don't think we are in position to have the specimens taken, cut out by anybody from anybody and sent in indiscriminately. And the word goes out that the pathologist says so and so and it must be so. I think Dr. Bloodgood will agree with me on that. Remember, we are not in Baltimore at the Johns Hopkins.

THE URGENT NEED OF HOSPITAL FACILITIES FOR TUBERCULOUS NEGROES*

By Martin F. Sloan, M.D.,
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One of the greatest health problems of the South, and one that is receiving very little organized and systematic attention, is the care of the tuberculous Negro. It is highly commendable of the Southern states that, as a result of the energetic anti-tuberculosis campaign that has been going on for the past decade, there are in this section, according to the 1916 Directory of the National Association for the Study and Prevention of Tuberculosis, 59 sanatoriums of a public or semi-public character with a capacity of 4,130 beds. There are 15 other senatoriums in process of construction, and there are 22 private sanatoriums with a capacity of 757. Of the 4,130 beds, only 114 are for Negroes. It is a reflection upon the farsightedness of the people that less than 3 % of the public beds are allotted to a race that constitutes 29.8 % of the population and one that succumbs to the disease in the proportion of about 3 to 1 white. It is possible, and I hope it is true, that there are other sanatoriums in existence which have not been reported.

SUSCEPTIBILITY

The susceptibility of the Negro to tuberculosis is generally well known. He has been in contact with Caucasian civilization comparatively only a short time and continues to exhibit the inherent predisposition to the diseases of the white people that is to be found in all aborigines. He represents virgin soil to an organism that has become virile through transmission through generations of people of a varying degree of resistance. Add to his inherited susceptibility an unusual fondness for alcoholics and retarded mental development, and the host is prepared for the ubiquitous and energetic tubercle bacillus.

Up to the present time the Negro seems to have developed only that degree of resistance to the tubercle bacillus that makes him an excellent carrier. He becomes infected; the disease develops; lung tissue breaks down and millions of bacilli are excreted daily; yet the host does not feel especially ill; he does not go to bed, but, on the contrary, he goes about acting as a pernicious disseminator of virulent bacilli.

*Read in Section on Public Health, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13, 1916.

Furthermore, for several generations following our Civil War the Negroes, released from the protection of their former owners, were unable to cope successfully with the responsibilities of a freedom suddenly thrust upon them. They drifted into lazy and destructive habits; they earned small wages; became migratory, dissipated, and in the seasons of plenty they improvidently failed to supply themselves with the necessities of life for the rainy days to come. Schools were not provided; neither did they appeal to them. Many became addicted to strong drink and drug habits; many violated every known rule of right living and in general made themselves a menace to the white people and their fellows. I would not be unjust to the minority who, by force and determination, have risen out of this state to a respectable and respected social standing. That they have done so bespeaks a better and happier future for yet a larger number. To these intelligent men and women, professional and laymen, we must look for leadership in much of the personal work to be done among the race.

PREVALENCE

The writer, desiring to get a fair idea of the number of tuberculous Negroes, sent a questionnaire to twenty different anti-tuberculosis organizations in the states of this section, but owing to undeveloped systems of registration, figures returned were estimates only and probably did not even closely approximate the correct number of afflicted. The sick Negro at best is elusive and many will never seek medical attention. The mortality statistics of the Government Census Report for 1914 records 4,896 deaths from tuberculosis among the Negroes in the states of Kentucky, Maryland, North Carolina and Virginia. Unfortunately, the others of the Southern states are not in the registration area. Cities classified as "registration cities" in the remainder of the Southern states reported 2,886 deaths, making a total of 7,782 reported. This number probably does not represent more than a third of the real total. In the State of Maryland, where the registration of tuberculous persons has been required by law since 1904, and where the law has been enforced rather rigidly by an unusually interested Board of Health, the records show that Negroes are infected about three times as heavily as whites. According to Dr. John S. Fulton, Secretary, at the close of 1914 there were 11,010 cases of tuberculosis on the active register of the Board of Health, 1,703 being Negroes. From January 1, 1915, until September 1, 1916, 399 Negroes died of pulmonary tuberculosis in the City of Baltimore. Practically all of these died in their homes, scattering virile germs of infection to their associates who, as laundresses, maids, cooks, barbers, etc., carried them to the four corners of the City and State. This also means that the deceased themselves, in order to exist, were compelled to work until exhausted by the hand of death. Sir Robert Phillip, of Edinburgh, after twenty-five years of experience in the dispensaries and hospitals of that City, says that each death from tuberculosis represents ten infected people. As applied to the Negro, this estimate is probably not excessive. If it is only approximately true, then there are 3,990 tuberculous Negroes in Baltimore. As a matter of fact, there were 1,485 on the Visiting Nurses' list on September 1, 1916. Is it not reasonable to believe that the conditions in Baltimore approximate conditions in other Southern cities?

SOCIAL CONDITIONS

The Federal Census of 1910, giving the last official and trustworthy figures available, showed that at that time there were 9,827,763 Negroes in the United States, of which 8,746,709, or 89 %, were in the Southern states. It is further shown that 2,857,732 of these people were engaged in agricultural pursuits such as trucking, poultry raising, dairying, producing small fruits and huckstering, occupations in which they handle directly the provisions of millions of consumers. The figures show that the Negro comes in closer contact with the white population than this, for 368,124 were laundresses and laundrymen; 22,534 barbers and hairdressers; 2,666 bartenders; 8,232 door boys and bell boys; 3,850 bootblacks; 8,428 butlers; 14,082 chambermaids; 92,301 charwomen and cleaners; 7,627 coachmen; 233,912 cooks; 11,119 nursemaids, ladies' maids and valets; 18,902 untrained nurses; 30,190 porters; 6,369 restaurant and lunch room

keepers. It is not necessary to recite this long array of figures and occupations to this audience to acquaint you with the close and intimate contact of the Caucasians and Negroes of our South. We have been nursed, fed, cleaned and clothed by them since our infancy and there is not a man or woman in the audience who does not see the face of some old black "Mammy" looming through the vale of years as this sentence is read. Undoubtedly, the races are interdependent; the economic and health problems of one are inseparably interwoven with those of the other, and the solutions of the health problems of one must be to a great extent the solutions of the problems of the other. Any campaign for civic, political, religious or moral improvement in the Southland that ignores or neglects the blacks will result in failure.

We have considered the susceptibility of the Negro to tuberculosis and its prevalence among that race. We have also considered the serious menace that the average of the race constitutes to his own race and through close association to the Caucasians. What, then, are we as health workers, economists and humanitarians to do?

It is not within the scope of this paper to deal with the many correlated agencies vital to a successful campaign against tuberculosis. I recognize the immense importance of dispensaries with their corps of trained diagnosticians and health bookkeeping systems. I appreciate the great value of visiting nurses who search out the suspected cases and follow up the positive ones, who spend much time and labor among many who see but will not heed. I realize the necessity of a campaign of health talks and a distribution of health tracts which impress cold facts upon the minds of the people; but to me, after an experience of eight years in dispensaries and sanatoriums, if there is a need in the crusade that stands out over and above others, it is the need of hospitals,—a place where the dying may be given a quiet, clean bed in which to pass his last days in peace; a place where he is not apt to infect healthy people; a place where the curable may be nursed back to an economic "cure" or arrest. Furthermore, the hospital represents a place where, by daily teaching and demonstrating by precept and example, and by reiteration of health rules, the ignorance, the prejudice and the superstition of the Negro would be overcome and he would be impressed with what is necessary to obtain and, what is better, to hold a "cure." The Negro, as a rule, demands tangible (abstract) demonstrations to impress his plastic mind, and be it said to his credit that once he is convinced he usually clings to his conviction with jealous tenacity.

HOSPITAL FACILITIES

Central Sanatorium.—It is the belief of the author that to cope successfully with the situation, each state should have at least one large, well-organized sanatorium to which should be admitted all the hopeful cases in the earlier stages of the disease. The routine treatment should be the same as that found in every properly-managed sanatorium today, but I want to emphasize three points of particular importance in the treatment of the Negro tuberculous, namely: entertainment, exercise and teaching. The institution should be arranged on the colony plan and should be attractively but economically constructed. Select, wholesome entertainment should be one of the first therapeutic agents provided for. This should consist of moving pictures, musicales by home talent and systematic parlor game contests in the evenings. It will be this entertainment that will hold him at the sanatorium until results are obtained.

Provision should be made to raise all the vegetables, fruits, dairy, poultry and pork products consumed on the place. Therefore, arable soil must be selected for the location regardless of altitude. The work on the farm should be done by the patients themselves, as far as it is consistent with physical improvement. Under medical supervision this out-of-door exercise constitutes one of the best known means of re-establishing the invalid's former working capacity. At the same time it precludes that idle mind which is so apt to breed discontent and absolute future physical worthlessness. This is a most important point in the treatment of pulmonary tuberculosis. Common sense on the part of an intelligent interested staff must be dispensed in treating tuberculous men and women who must earn their living after leaving a sanatorium. There are

other industries that can be operated in the open, such as canning, broom-, box-, pottery- and basket-making, the products of which are always in demand in an agricultural community. It has been my joy and pleasure to see patients literally work their way back to health in these out-of-door plants. The patients are necessarily divided into different groups, depending upon their physical incapacity.

The operation of these and the finer industries has the added advantage of holding down the maintenance cost of the sanatorium and thus makes the institution available to a larger number than otherwise it would be. This feature should by no means be made paramount, but it certainly has to be considered when so many demands are being made on an overtaxed state treasury.

While treating the patient (and the disease) every effort should be made to educate him in hygiene and sanitation. This would be done best by bedside demonstrations and by systematic class-room didactic teaching. An hour each day applied to intense study of the fundamentals of hygiene and sanitation would put a powerful weapon against disease in the hands and minds of these people, who would later go back to their respective communities as health missionaries. The result of such a training would be of inestimable good to the state.

If necessary, laws should be enacted compelling a patient to enter such a sanatorium, requiring obedience to the rules and regulating the length of residence. A minimum stay of six months should be demanded. Proper management and a display of sympathy by the medical and nursing staffs would soon displace the written laws covering these points for the majority of the inmates.

Local Hospitals.—Furthermore, each county and city should have a smaller hospital near home for the hopeless and dying cases, and this class should be kept until final dissolution. The atmosphere of this hospital should be pleasant and homelike. From an economic standpoint it, too, should be supplied from its own farm. In case of unusual improvement and arrest of disease by any inmate of this hospital, he could be transferred later to the larger state sanatorium for further treatment and training. Likewise, failing patients at the larger sanatorium should be transferred to the hospital nearest home for the ultimate end.

Thus, briefly, and possibily unconvincingly, I have given my idea of caring for consumptive Negroes. I hope other ideas will come out in the discussion. The problem is a tremendous one, and must be handled in an effective, practical and humane way and without further delay. As guardians of the health of all the people, we must impress upon our legislators the urgent need of hospital facilities for this race, which, by its susceptibility, manner of living and limited knowledge of prevention and cure, is daily disseminating a disease more chronic than hookworm, more subtle than infantile paralysis or pellagra, and one that is causing a greater economic loss to these Southern states than all the other diseases combined.

DISCUSSION

Dr. John J. Lloyd, Catawba Sanatorium, Va.—The Negro, as Dr. Sloan so well brought out, we all know to be a very careless liver and a very, very potent source for spreading every infection, and especially tuberculosis. The South hasn't waked up to this question yet, but we are beginning to do so.

In Virginia, three years ago, our Legislature refused to make an appropriation of $10,000.00 to begin treating the Negro tuberculous, but a year ago we succeeded in having an appropriation made, when the Legislature appropriated $62,500.00. That was available in two yearly appropriations: $40,000.00 to be used for building equipment and so forth and the remainder in maintenance. Thus far we haven't been able to build a sanitorium, but have purchased a farm site and will begin construction soon. But with the money available we can care for only between thirty and forty Negro patients.

In 1914, we had a total number of deaths from tuberculosis of 1,568 in Virginia, that is, Negro deaths, and if we multiply that by ten, which is the accepted rule for finding the number of cases, we get 15,000 cases of tuberculosis to be treated in Virginia with which we have thirty to forty beds to care for them.

Virginia is the only Southern state that I know of that has made any appropriation or provision for caring for tuberculous Negroes, and that's simply a drop in the bucket, and it looks to me as if it's up to the physicians in the South to get in behind this movement and see if we can't shove it across. Now, it takes a long time, but the doctors, if they will work together, have a tremendous power in legislation, and legislation is the only way that we can meet this demand. It seems to me also that the greatest talking points we can possibly have for an appropriation are: first, is the danger that the Negro is to the white man; and second, the economic loss that the labor of the Negro is to the white man when he is down

with tuberculosis. If we can all get together and work along this line and have something done for the tuberculous Negro, I believe we can reduce the white death rate further than it has been reduced. If we don't, I don't believe there is any possibility of getting the white rate reduced one bit in the world beyond that which we have already been able to accomplish.

Dr. L. B. McBrayer, Sanatorium, N. C.—Dr. Sloan has covered the ground very thoroughly, and he has formulated the plans that I believe are best for us to undertake to work out for the care of the Negro race; and I might say that those plans are also suitable for the white race.

The problem of handling effectively tuberculosis, either in the Negro or the white, is a great problem, as Dr. Lloyd has well said, but when we stop to consider the fact that there are more deaths from tuberculosis than from all other preventable diseases put together, why, it is well worth an expenditure of money.

We have recently, in North Carolina, had an appropriation for the anti-toxin farm amounting to thirty or forty thousand dollars, and we are going to make our own diphtheria antitoxin, and, of course, the continual expense will be considerable, but we don't have more than about thirty deaths in a year from diphtheria in all the races; so that we have been spending money on the other preventable diseases, perhaps, in proportion to the deaths produced by them, and we have been very successful. Now, if we spend the same amount of money, perhaps, on tuberculosis we may do the same with tuberculosis. It is probably more expensive to handle and a little more difficult to handle, but it can be handled in the same way, and it seems to me we ought to pay more attention to a thing that is producing so much heavy mortality as is tuberculosis, as well as the things that we have under appreciable and apparent control.

I would emphasize the point in regard to having a place for the Negroes. There has been a great deal said about poverty and tuberculosis and tuberculosis and poverty. In fact, among the Negroes and among a great many white people, they are synonymous terms. If you want to produce poverty quickly, just let a bank clerk or any other man making $150.00 or $100.00 a month, who hasn't saved up a goodly sum,—and most of them have not at the age at which tuberculosis attacks them,—let the head of the house come down with tuberculosis and you'll find that family will become paupers. And in the Negro race, every time one of them gets tuberculosis he becomes a pauper, even if he were not before, so that they must be cared for at public expense. I don't agree for a moment that any state in the South could not put up a sufficient amount of sanitorium facilities to care for the white and Negro races. They could, for they are plenty able to do it, but getting them to do it is another thing. If we could go to them and ask them to put up so many million dollars they would throw up their hands and quit. So you have to ask them for what you think you may get, or perhaps a little bit more. Now, then, you get the state to provide what Dr. Sloan has said, then come around to the county, and if a systematic campaign should be waged in which the profession would lead, as they ought to lead in all matters pertaining to health, it would only be a short time until this thing, large as it looks, which Dr. Sloan has pictured to us, would be a reality. And I want to agree with Dr. Sloan in regard to the menace of the colored race to the white. So, if for no other reason than as a matter of selfish protection to ourselves, we ought to take care of them. I remember an instance which pictures the matter very vividly. A woman of average intelligence, or perhaps more, in one of the cities in our State had a cook, a very splendid cook she was, too, but the cook did not seem to be right well, and she gave her a vacation and told her to go off and rest and come back in a month; and she did, and she was no better, and she sent her to a physician and found out that she had tuberculosis; and so she said: "Well, I have some young children here. I can't keep you any more. You'll have to go. I'm very sorry." She did, and she made application for work in another home and the lady said: "Where have you been working?" "Why, I have been working for Mrs. So and So." "All right, you come back tomorrow and I'll let you know." So she called up this lady and the lady said: "Well, the girl had tuberculosis, that's the reason—and I couldn't keep her in my family any longer." And when that girl reported next day for her job she was informed she couldn't get it, and there was nowhere in the world for her to go. That's the thing over and over again. The white woman was doing the proper thing; she must protect herself and her family, but we as guardians, more or less, for the colored race, have no right to send them out to be treated worse than we treat our lower animals.

Dr. Roy K. Flannagan, Richmond, Va.—The Negro Sanitorium of Virginia, for which the farm has been bought and the buildings are soon to be constructed, was started practically in the same way. We have in Virginia The Negro Organization Society,—an organization of all the Negro organizations,—and I want to tell you it's *some* organization. These people get together once a year in some place with a big auditorium,—in Richmond or Norfolk, for instance,—for they can't meet anywhere except in one of the big cities. This Society has taken as its job the sanitation and improvement of Negro homes. The fact was placed before this organization that the penitentiary and the lunatic asylums of the State were the only places where any tuberculous Negro could get adequate treatment; he had to commit a felony, steal a horse or break into a house, before he had any chance to get well of consumption. The law-abiding darky with consumption could only die, which he soon did after infecting unnumbered other folks. This fact being borne in upon these Negroes, they set to work and raised a fund. Their appeals went broadcast and the little societies everywhere sent in contributions, many of them in pennies and small amounts. This Society then came before the Legislature and said: "Gentlemen, we have $3,000.00 with which to buy the farm or to help construct a

sanitorium for our people," and what could a legislature do under the circumstances? They had to come across, and so an appropriation of $20,000.00 a year for two years was made available for this purpose. The Negroes will respond right along if we just give them a show and tell them specifically what they can do, and make them see the need of their co-operation. They are numerically very strong and there is a whole lot of money among them. They don't mind spending their money, for they believe that money is only made to spend, so it's just "come and go" constantly. They had just as soon it would go for a good thing as a bad thing, and when people in whom they have confidence "put it up to them" squarely, their impulse to do the good thing will prevail.

Dr. Claude A. Smith, Atlanta, Ga.—In Atlanta we have a tuberculosis hospital of between 275 and 300 beds, and about 125 beds for Negroes. We have built this year, just opening up now, a building for advanced cases for Negroes. The white division was opened first in 1910. We didn't stop to inquire whether the high mortality was going to stop, and it has been overcrowded all the time in the white division. In the Negro division we began in the same way, taking the advanced cases, the ones we considered most important.

Dr. McBrayer said very truly that you have the Negro with the advanced cases and you have no place for him to go. Our experience has been this, after we provided a building with 75 beds. It was open nearly two years and yet has never been filled up, and still we have the pauper cases scattered around the City.

You may say you must have police power. If you will look at our municipal law you will see we have the most drastic law for the control of tuberculosis in the United States.

A Member.—Can you take a Negro and put him in the hospital against his will?

Dr. Smith.—We can. But we must consider; we must go cautiously. If you take the Negro and put him there then they use every means in the world to hide the disease, and we will only do more damage that way.

This building for the Negroes was 200 feet long, which was originally constructed to hold convicts. We put porches all around it, rearranged it and left the bunks. We took the bunks, painted them, put nice new mattresses on them, clean sheets and nice pillows. We had an effective hospital. There were ten or twelve that were absolutely forced to go there—couldn't go anywhere else, couldn't hide. We couldn't work out the problem at all until finally one of the leading Negro churches, one of the "ladies'" aid societies of the Negro church, came and said: "We want to donate to you twenty-five beds such as you have in the white division." We said: "All right; we are glad to have them." They gave us five. We saw then that was probably our trouble. We then began to throw away those bunks, ordered beds for them, and still we have never had more than seventy-five Negroes in the place at one time. It yet has never been full.

Now, one other thing we discovered, you have got to go and work side by side with the Negro to find out what their troubles are. They won't tell you. We found that we were taking advanced along with incipient cases and all had to be in the same building, female in one end and male in the other. As soon as an advanced case died, twelve left. As fast as we got them in some would leave. Now, the same trouble existed in the white division, although the white division has been overcrowded. We put up last year a building for the advanced cases so as to keep them off separately, so that the convalescent can't see the advanced cases at all. This year we have put up a duplicate of that building for the Negroes, and it isn't yet open, and we hope that's going to be the greatest thing in solving the greatest part of our problem.

In 1908 and 1909, when we were getting about putting up this institution, the location of the institution was way off yonder. Shall the State build it? Some of us were interested in getting the State institution up at Alto. It took two years to get $25,000.00 from a bunch of legislators. As soon as they were educated, another bunch would come in and say: "I don't think that's any good at all." Therefore, it appears to us that the thing to do is to get each locality to do its part, and so we concentrated our efforts upon this locality here.

Our location is about three miles out of town. We have thirty-seven acres of land, not as much land as we want, but this summer they raised all the vegetables on the place. We also built a model dairy to show the dairymen in this section how we consider the milk—this is under the operation of the Health Department—should be produced, also, the construction of the buildings to fit Southern conditions. All that we established in conjunction with the institution in this City. But the Negro problem is our problem, we consider, from our investigation, because they go right back to their relatives and you can take nearly any darky here and trace him right back to some advanced case of tuberculosis. Association may be right in his home, and so, therefore, that we consider is our problem.

The Negro before the War was the healthiest individual in the world,—whatever was the matter with him we would take care of him. We have given him tuberculosis and he simply acts as a carrier. Is all our health work, unless we check back on the family, doing any good?

Since we opened the white division of this institution in 1910, our mortality among the whites has been almost at a standstill, almost no increase, and the population of the City has rapidly increased. Among the Negroes the increase has been enormous. The Negro we consider our main problem; and we feel that as soon as we can have as much work accomplished among the Negroes as we have among the whites, we shall show a marked reduction in the mortality.

Dr. G. M. Tolhurst, Cornelia, Ga.—I am glad to hear Dr. Smith say that the Negro is the problem. I was called in July to see a patient that they said had rheumatism, but who was practically dying with tuberculosis. He only lived

about three or four weeks. I got a history of the case and found he had been an attendant at the State Sanitarium and had been a very faithful Negro. He had taken patients there that were dying in the Sanitarium or very sick, held them in his arms, held them up and worked with them and he had contracted this disease. There is no place at all for these Ngroes in this State Sanitarium, so after getting the disease he was thrown back on the white population where he lived. One of his sisters was a cook in a very popular home there, and washing was carried into that home from white families and carried back and the conditions of the house were dreadful. It couldn't have been in worse or more unsanitary condition where there was a case of tuberculosis. I did feel that the State ought to have taken care of this fellow, especially as he had taken the disease in the State Sanitarium, but I understood there was no provision made for Negroes there at all.

Dr. Paul B. Johnson, Washington, D. C.—I was very much interested in what Dr. Smith said about the inability to hold the Negroes in the hospital. Our experience in Washington was this: when the tuberculosis hospital was first built there, it was impossible to keep it full and the tuberculosis nurses, the visiting nurses throughout the District, stopped sending patients there. They said it was no use, as the patients would go there and stay a little while and leave. The present Superintendent not only has filled the hospital up, but has a waiting list,—has had a waiting list two or three years. I think it is largely due to his kindly manner toward his patients, in addition to his skill. It is also due to the fact that the incipient cases are separated from the advanced,—we have separate wards for the incipient and advanced, white and colored, male and female.

Dr. R. L. Jones, Nashville, Tenn.—I wish to make just one suggestion in the controlling of Negroes. In our Davidson County Hospital we, too, have a waiting list, both among the Negroes and whites, and have no trouble in getting them into the Hospital. That is largely due to the fact that we have a tuberculosis bureau and four tuberculosis nurses. Two of these are Negro nurses, and they can get at them when white nurses can't. I remember a typical case, an ignorant Negro that the Director of the Hospital was trying to get into the Hospital, but he could get nothing from him. One of the colored nurses called the doctor aside,—she was a very intelligent woman,—and as she expressed it, "Doctor, let me have him; he's afraid of you because you are a white man and nobody can get anything out of him but a Negro." And she got it from him and got him into the Hospital; and I think our problem is largely solved by having Negro nurses handle Negro patients.

Dr. W. J. Durel, New Orleans, La.—In New Orleans we realized how hard it was going to be for the State and Nation to take care of the Negro tuberculous. I was surprised in the last three months,—the Negroes in New Orleans have raised $4,000.00 for the Negro wards at the Charity Hospital. One little point we did: We invited the Negroes from other communities to visit the white wards of the Hospital, gave them a little talk, and as I say, in three months they accumulated $4,000.00, and they are building accommodations for forty-five patients. I believe it is going to be some time before our State and National Governments will control this great problem. So let us, in each state, take this little hint, for I think in each state we can accomplish something.

Dr. H. H. Shoulders, Nashville, Tenn.—Before I start I wish to make myself clear on two points. First, that what I say with reference to the sanitorium in the management of the tuberculosis situation refers only to the sanitorium as a means of prevention.

I don't know why the state is under any more obligation to treat tuberculosis than it is to treat a broken leg, except in so far as the treatment affects prevention.

Second, I wish to make clear this point: that our democratic ideal is this: The accomplishment of the greatest good to the greatest number. It is not that of providing ideal conditions for the few.

It is strangely true that we sometimes think we have referred to the tuberculosis problem when we have only referred to the advanced cases of the disease, which in reality represent only one phase of the problem.

We referred to a state yesterday which had five thousand deaths last year. We will see if we can determine from that information anything about what that state's tuberculosis problem really is. It will certainly have five thousand deaths this year, and unless something out of the ordinary happens will have the same number of deaths next year, which is to say that the state now has on hand ten thousand cases of tuberculosis sufficiently advanced to die within two years. How many children, Dr. Minor, are there in that state with the infection? How many persons with the process less advanced than those who will die in two years? We can not say, of course, but the number must be enormous.

Now, how shall we proceed to help that situation with the view of accomplishing the greatest good to the greatest number, and with the view of preventing the disease rather than the view of treating cases?

What would we accomplish by the construction of a tuberculosis hospital? If we should spend a hundred thousand dollars in building and equipping a hospital and one hundred thousand in maintenance, how many cases would be isolated? Let's assume that two hundred cases would be isolated, that is, allowing five hundred dollars per year per bed for maintenance. Two hundred advanced cases would be taken from the home and treated in the institution. But we will not forget that those who have been in contact with the case in the home have in a majority of instances contracted the infection before the isolation is accomplished. So we will not have curtailed the spread of the infection to the extent we might sometimes imagine. Too, we will have done practically nothing for these incipient cases. We will take two hundred

cases out of the two hundred homes and spend $200,000 on them, maybe more, maybe less. (I have included the cost of construction in these figures.)

Could we spend two hundred thousand dollars more advantageously? I think so. We can provide a nurse. To do what? To go to the home. We can isolate the advanced case in the home, and in addition come in touch with the other infected persons in the home. The advanced case will be taught how to prevent the spread of the infection. The other members of the family will be taught how to take care of an advanced case of tuberculosis, and, in addition, will be taught how to live so as to preserve a high degree of resistance, to which Dr. Minor has very aptly referred. Both they and the community will be taught by demonstration.

Let's see how far we would get. Let's assume that the salary and expenses of a nurse would be $1,500 per year. Let's assume she would touch twenty-five homes in a year. More than one hundred nurses would be employed with the $200,000. One hundred nurses would reach 2,500 homes in one year. They would reach twenty-five hundred advanced cases, and five times that many, or twelve thousand and five hundred persons intimately exposed, a large number of whom are already incipient cases.

By this method of expending any given sum the greater number would be touched at a more vital spot, in a more practical way. The entire number of advanced cases would be touched in a short while, and what is more the persons who will furnish the advanced cases of tomorrow will be reached early.

Dr. L. B. McBrayer, Sanatorium, N. C.—I think that we ought to correlate in a few words what has been said along this line.

Now, Dr. Sloan knows the need of nurses just as well as does Dr. Shoulders, and also the ideal thing to teach. Let me say that the time is fast coming when the state will have to take a hand in the care and treatment of its sick people. We have heard that discussed in this section heretofore,—not only tuberculosis, but all other diseases, and the treatment of tuberculosis is perhaps going to lead the way.

The ideal thing, as I started to say, is about this, just as Dr. Sloan has pictured. I am going to review it just to correlate the whole thing. A state sanitorium, where the whole thing will be centered; a local sanitorium in every county, perhaps, to take care of the advanced cases, and especially in the South, of the colored people; and nurses, as many as are needed.

In North Carolina,—if you will pardon the digression,—we have a Director of Public Health Nursing and 42 nurses. That isn't half enough; it isn't one-tenth enough; but we are going to try. Dr. Absher, who read a paper before you, is going to try to put on enough nurses in one county to show the value of nurses when the nurse's field is properly covered. Then, in addition to that, every case is reported to the state sanitorium, or rather, to the Bureau of Tuberculosis, and literature is sent to each of those. Now, if simple instruction were sufficient, that would cover the thing, and it would do it cheaply. It hardly costs anything, for it only costs 2 cents to get the report and 2 cents to send the literature back. So, now, if that would cover the ground, it would be all right and well, and we could do it with very little money. We have already got the money in North Carolina. But recently in tuberculosis work in New York City, they have issued a report where they were working the nurse idea and the sanitorium idea side by side. They will spend—I can't recall the figures exactly, but I can give the proportions, we'll say they spend a million on sanitorium treatment, and then they spend $750,000.00 in nurses, and they come right back at you and say the unfortunate part about the nurse problem is we have had to spend 75 to 90 % of that money in maintaining the folks who are absolutely dependent in their homes, and so it goes. Then, we need sanitoriums, all of them we can get, and nurses, all of them we can get.

Dr. Martin F. Sloan (closing.)—I feel that Dr. McBrayer is right in saying that all of the different agencies must be correlated in order to get effective results. I can not agree with one of the previous speakers who said that these patients can be treated successfully in their homes. Those who have dealt with far-advanced cases in the last stages of their disease when they are delirious, know how irresponsible they are. We keep our dying patients in small rooms, the fronts of which are open all the time. Many times in their irresponsible moments they will expectorate sputum across the room. If these were in their own homes, where the sputum might be deposited in obscure places, they might do irreparable harm. It is in the last few weeks of their lives that these individuals constitute the greatest menace and I believe it is the feeling of nurses in large cities that far-advanced consumptives should not be treated in their homes, if they can be taken to some institution.

One other point brought out, I think, is a good one, and that is the enlistment of the colored people themselves in this work. The intelligent ones should be made to feel that this is their work and when the lower classes see that their own kind are interested they are going to fall in line. In this connection I would suggest that sanatorium directors invite representative societies among the colored race to their institutions and show them everything about the place and then let them go home and work up sentiment in favor of a sanatorium in their respective communities.

A word in regard to entertainment. Wholesome entertainment is one of the first methods of treatment that should be given in a sanatorium. It is a treatment and the entertainment of the mind is going to do more to help the tuberculous Negro in the institution than any other factor. In this connection I want to emphasize motion pictures, which appeal to the mind very strongly. It will be difficult to get some to go to the institution and it will be difficult to hold them after they get there. Only by giving them plenty of amusement will we be able to ac-

complish our purposes. It is my conviction that if, after the institution has been made attractive and is doing good work, advanced consumptives constituting a menace to the community refuse to enter, they should be compelled to by law, and the law should require them to stay there until those in authority discharge them.

In regard to the care of incipient and advanced classes of patients, I do not believe these should be housed together in the same building or groups of buildings. One is a bad object-lesson for the other. The advanced case is continually regretting what might have been if his case had been discovered a little earlier. Perhaps more could have been done for him. The incipient is inclined to be influenced by the ailments of which the other group will occasionally complain. So to get the most good out of any institution the two classes should be kept far apart. Eudowood Sanatorium, where I am located, has its hospital for advanced cases a quarter of a mile away from the cottages for the incipient cases.

AUTHORS' ABSTRACTS

Medicine

(Continued from page 636)

Neuritis and Perineuritis with Reference to Newer Method of Treatment. William Martin, Atlantic City, N. J. Medical Record, Vol. 91, No. 13, March 31, 1917, p. 540.

The writer recognizes the fact that all pains are not due to a true nerve inflammation, but frequently are the result of a peri-neuritis. Relief from pain is the main thing sought. Infections must be recognized as etiologic factors, as well as the usual causes given in the past.

Superficial nerves are more apt to become involved. Many cases are bilateral, which is contrary to the teaching of the past. This can be proven by the proper tests made by the use of the static wave current. The necessity for making these tests has been clearly demonstrated to the writer's satisfaction.

Reflex pains are quite common as the result of neuritis; for instance, pains in the calf of the leg and painful feet, similating flat foot.

Treatment of neuritis and peri-neuritis suggests removal of the etiological factors as well as the actual treatment of the nerve or nerves. Modern methods include electro-therapeutic measures, now well established in their efficiency. These measures include the use of the high candle power lamp for the hyperemic effects, the static wave current, applied by either the flexible metal plate electrode or the vacuum tube. This causes a sedation and metabolistic effect upon the nerve structures, as well as relieving muscle spasm, and the expression of exudates. Following by the indirect static marks offers a most useful adjunct. Diarthermy is useful in the acute stage and in nervous cases, as it is void of pain. The constant current, plain or by ionic medication, may be used also with benefit. Internal pressure by uterine misplacements or enlargements require attention, as will prostatic enlargements, in order to secure a cure in such involvements.

The Action of Pituitrin Upon the Gastrointestinal Tract of Man. H. K. Pancoast and A. H. Hopkins, Philadelphia, Pa. New York Medical Journal, Vol. CV., No. 7, February 17, 1917, p. 289.

The Roentgen examination is an accurate and valuable means of studying certain phases of drug action upon the gastrointestinal tract of man.

The observations were made from a careful study of eleven patients to whom piutrin was administered. In each instance a control examination was made previous to the study of the effect of the drug. No other medication was employed at the time. The examinations were made by the fluoroscope and Roentgengrams.

While the effects were very variable, there was sufficient uniformity in the effects produced to enable the writer to draw definite conclusions.

In the stomach, there was usually a primary depressing influence upon peristalsis or motility or both, followed by an increase in both. The same effect followed repeated doses. The pylorus was influenced very little, and when any effect was noted, it was variable.

In the small intestine motility was as a rule either not affected or was slightly delayed.

In the large bowel, the drug produced little or no appreciable effect upon motility in the class of patients examined.

It is practically impossible to examine post-operative cases, as the patients would not be in condition and control examinations would not be advisable.

The Functional Capacity of the Stomach as a Basis for Judging the Value of Any Method of Surgical Treatment. A. O. Wilensky, New York, N. Y. The Journal of the American Medical Association, Vol. LXVIII., No. 12, p. 890.

The value of any treatment depends to the greatest degree upon its functional result. Methods are outlined which reflect accurately the state of the various stomach functions at any given moment. These can be applied after operations as well.

The digestive function is investigated by means of adaquate examinations of the content of the stomach in the morning before the taking of food, after an Ewald test-breakfast and after a Riegel test-meal. These are controlled by means of a "fractional study" of an entire digestive period.

The motor function of the stomach is investigated by means of (a) kymographic tracings after the methods of Cannon and Carlson and their collaborators and (b) by means of the X-ray. From the latter only such information is taken which has a bearing upon the physiological activity.

Four cases are cited as examples, illustrating a normal case, a case of ulcer with marked symptoms, an operated case with no symptoms and an operated case with post-operative symptoms.

By these methods one can judge the amount of functional disturbance accompanying any lesion and the degree of improvement or cure following any line of treatment.

SURGERY, GYNECOLOGY, OBSTETRICS AND GENITO-URINARY DISEASES

PROTEAN MANIFESTATIONS OF APPENDICITIS*

By F. G. DuBose, M.D., F.A.C.S.,
Selma, Ala.

Never before in the history of medicine and surgery has appendicitis attracted more attention—far more now than when the operation of appendectomy started its epoch-making career three decades ago.

Its association with many abdominal conditions, adding to their seriousness a tragic element; its rather uncertain etiology; its extraordinary cause of morbidity; and unnecessary cause of over 2% mortality during adult life, make it a problem worthy of the serious consideration that it is at present receiving from the profession.

In the etiology of appendicitis we are about to accept as proved, first, that it is a result of blood infection; and second, that it is also a result of trauma to the appendiceal mucosa.

First, as a blood infection. The portals of entrance of infecting organisms, notably streptococci, are through the tonsils, the lymphoid tissue of the nasopharynx, and the alveolar processes. Rosenow, in his experiments, has conclusively shown that the introduction into the blood stream of streptococci, cultured from the diseased appendiceal mucosa, will reproduce appendicitis in the subject injected. The same is also true of cholecystitis, gastric and duodenal ulcers, each having a different strain of hemolytic streptococci respectively. He concludes that, because these inflammatory conditions can be reproduced in this manner, these are consequently due to blood infections, and that these diseases are primarily the result of blood infection. Poynton, in a case of appendicitis following tonsillitis, recovered from the appendix the same strain of strepto-diplococci that were cultured from the throat. These are but examples of the vast amount of laboratory confirmation of this association between appendicitis, lesions of the tonsils, and lymphoid tissue in the upper respiratory tract.

Second, trauma, a solution of continuity of the appendiceal mucosa, is a starting point of appendicitis. Savini believes that when these lesions of the appendiceal mucosa become infected necrotic appendicitis is the result; that if the wound in the appendiceal mucosa remains aseptic chronic appendicitis is the result. This last explanation of appendicitis is difficult to accept. The extensive pathological researches of both Stanton and Moschowitz rather conclusively demonstrate that chronic appendicitis, or the so-called catarrhal appendicitis, is in reality a resulting anatomical and histological distortion, following the process of healing in acute appendicitis; that is, chronic appendicitis is healed acute appendicitis, and, as a pathological entity, does not exist. The fact that the appendix is more richly supplied with lymphoid tissue than any other structure in the alimentary tract, except the tonsil, would cause us to group the appendix along with the tonsil as a potent portal of infection of the blood and lymph vascular systems. It is easy to understand that when this constant anatomic diverticulum is infected, the lymph stream bathing the tissues in the upper right abdominal quadrant is polluted. Hence, pancreatitis, or pancreatic lymphangitis, cholecystitis, pyloric and duodenal ulcers result from this pollution. In addition to this form of extension of inflammation, there is another source of irritation and inflammation through the nerve supply of the appendix; adhesions, kinks or cicatrices cause reflex irritation of the superior mesenteric, cardiac, hepatic and gastric plexuses, and produce pylorospasm, hyperchlorhydria and consequent duodenitis and cholecystitis. Even sciatica and paraplegia have been clinically demonstrated to be due to appendicitis in unusual instances. Indirectly, these sources of disturbance, anatomically, pathologically and bacteriologically, open wide

*Read by title, Section on Surgery, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov .13-16, 1916.

fields of morbidity in the systemic toxemias of intestinal origin; these toxemias being the direct result of bacterial infection by-products. The different bacteria entering the blood stream and lymphatic channels, as a result of an inflamed appendix, are many — bacillus coli communis predominating, next in frequency streptococcus, bacillus capsulatus, bacillus fusiformis, tubercle bacillus, staphylococcus, bacillus subtilis, and coccus conglomeratus, etc.

The similarity of the symptom-complex of appendicitis and of intestinal toxemias has been emphasized by Da Costa. It is not to be inferred that all intestinal toxemias are of appendiceal origin, but are factors in the etiology of this condition. The predominance of appendiceal pathology is emphasized by Deaver and Pheiffer, who found in five hundred incidental appendectomies 32.4 % normal appendices and 77.6 % active appendiceal inflammations.

It is not to be inferred from this resume of the "Protean Manifestations of Appendicitis" that the removal of the appendix *per se* is sufficient to effect a cure of any or all of these remote results, for it is to be presumed that duodenal or gastric ulcers or pyelitis, et al., must all have treatment respectively appropriate. It is my purpose to emphasize the necessity of an early recognition and removal of the appendix in order to avoid the immediate mortality of the fulminating appendicitis and the remote morbidity of the so-called chronic appendicitis.

WRIST-DROP FROM TRAUMATIC ADHESIONS ABOUT NERVE TRUNKS. REPORT OF TWO CASES*

By Chas. S. Venable, M.D., F.A.C.S.,
San Antonio, Tex.

Inasmuch as the modus operandi generally practiced in attacking the deformities resulting from impairment of nerve impulse has seemed to require the most operating, I have attempted a shorter cut and hope that the end results in the two cases I have to report will suggest a trial by other and further investigation. I shall not dwell upon what had been done by tendon transplantation and the very good results obtained — also by the implantation of an active nerve into an inactive nerve distal to the point of its occlusion of impulses with equally good results.

The method that I have to offer is simply easier of execution and has accomplished all that could be desired in the cases I am to report. It has been taught that the early freeing of a nerve from adhesions, even though sufficiently dense to obstruct it, will restore its function, which is true, but the teaching that long and complete obstruction causes permanent injury through the seat of which no impulses can again be transmitted is fallacious. The idea has taken hold and been handed down through failure of attempts of nerve stretching, dissociation of fibres and freeing adhesions which are not sufficient except in the occasional case in which the adhesions do not recur. Unfortunately in nearly every case adhesions do recur, which I take to be the cause of failure. To prevent this was the object I had in view. This was accomplished by using fascia which was cross sected well above and below the site of injury to the nerve and was bluntly freed from the underlying muscle that was to receive the nerve in its new bed. The fascia is fashioned with its long axis in the direction of the nerve, and of sufficient width to cover the nerve without tension. This is done first in order that it may be perfectly dry when the nerve is transplaced. The adhesions about the nerve are then dissected away, and if still constricted the nerve fibres are dissociated and the whole nerve for one or two inches above and below the immediate trouble is lifted from its bed and transplaced to the new bed already prepared. The fascia flap is layed loosely over it and fixed. You will see that this is different from rolling a strip of fascia outward (away from the muscle) over the nerve while it carries out the same idea of protection, but adhesions are transmitted more readily from the outer than the inner surface of the fascia .

These two cases are selected because of the definite and severe trauma of the respective nerve trunks and also because of the long duration of the deformity.

*Read by title, Section on Surgery, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

CASE REPORTS

First case is that of W. S., a boy 11 years old, which occurred in the practice of Dr. Cunningham. When five years old he had fallen and injured his elbow. Fracture was not recognized, but there was most probably a T-fracture of the lower extremity of the humerus, as a few months later a bony mass was to be felt to the outer side of and under the biceps tendon. This continued to grow 'till it inhibited flexion. In December, 1914, an operation was done to remove this exostosis and it was found at the first change of dressing (nine days later) that the boy had wrist-drop. No electrical response could be gotten in the extensors of the forearm, so of course the question of severance of the musculospiral or its interosseous branch or occlusion by adhesions or possibly too tight a dressing, at once arose. Treatment was instituted and persisted in 'till August, 1914, eight months later, without avail; wrist-drop was complete and pronounced muscle atrophy and reaction of degenerative were present. He came to operation August 26, 1915. Through a wide dissection the musculospiral was picked up and traced down, when it was found that the interosseous branch just before entering the supinator longus became lost in very dense fibrous adhesions binding it firmly against an uneven surface on the bone. On being freed the nerve trunk was found intact and dissociation of its fibres was not necessary. A strip of fascia from the branchialis anticus was dissected out and the nerve transplaced to a new bed along the muscle. A palmar splint was applied to relieve tension on the extensors and massage and electricity begun. In about six weeks the patient could show extensive effort in his fingers with a trace in the wrist. From this time progress was rapid until in three months from the time of operation he had full power of extension of the hand and wrist against pressure, and all muscle atrophy had disappeared. It has been fourteen months since operation with perfect functional recovery and no reason to anticipate recurrence.

The second case is that of G. W., 43 years old, who was brought to me December 8, 1915. In March he had what was supposed to be an osteomyelitis of the humerus. At operation the bone was entered about its middle third, the line of incision being at the border of the brachialis anticus. The wound was very tightly packed with gauze which was not removed 'till the fourth day. On or about this time wrist-drop was observed. This was thought probably due to the pressure of the dressing and a good prognosis was expressed. However, after nine months of electricity, massage, etc., there was no improvement, but rather pronounced muscle atrophy and complete wrist-drop. Reaction of degeneration in the muscles involved was positive. The outlook seemed grave in a case of this long standing in one of his age and he came to operation understanding that no benefit might be derived. I found his musculospiral constricted for five-eighths of an inch and bound firmly against the bone by dense fibrous adhesions almost inseparable from the periosteum. From the experience of the former case I fashioned the fascial flap first so that it might be entirely dry for the transplacement. The nerve was then freed, the fibres dissociated throughout the constricted area and the whole, including two inches above and one inch below, transplaced into a bed along the brachialis anticus and covered by the fascial flap. As in the former case, massage and galvanism were ordered and a palmar support fitted. There was no apparent improvement for ten weeks. From that time improvement was rapid and in March he was able to discard his palmer support. In the succeeding few weeks there was complete restoration of function which has been retained uninterruptedly these succeeding eight months. I think he is permanently relieved.

The procedure suggested only differs in the kind of new bed prepared and the use of the inner instead of the outer face of the fascia. The points of advantage, I take it, are the softer, less resisting muscle on the one side and one-half cover of fascia, the inner face of which lies against the nerve, on the other.

THE SURGICAL PHYSIOLOGY OF THE SPLEEN*

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Many things about the spleen excite our interest; but the most extraordinary thing about it is our ignorance.

We know that normally it is concerned in the elaboration of leucocytes; that it destroys senescent red corpuscles; that it conserves, and probably sends on to the liver, such products of this cell destruction as may have food value; that it extracts from the circulating blood, and probably forwards to the liver for proper distribution or destruction, certain toxic products of metabolism, and that in prenatal life it manufactures red and white cells.

The spleen is present in all red-blooded animals. It is not essential to life. It has not been shown to produce an internal secretion. Its removal is followed by temporary leucocytosis, perhaps by temporary polycythemia, by an increase in the size of lymph glands and probably by an

*Read before the Fulton County Medical Society, Atlanta, Ga., February 15, 1917. Substance of a lecture to senior class, Medical Department, Emory University.

increase in bone marrow. And these last named tissues are supposed to assume whatever functions of the spleen that may be essential functions.

The blood supply of the spleen and the planting of the organ in the portal circle, with its consequent relation to the liver, pancreas and alimentary canal, are interesting and suggestive. The splenic artery is the largest of the three branches of the celiac axis; even after it has given off the gastro-epiploica sinistra it is probably larger than either the hepatic or the gastric, the other two divisions of the axis. The small vessels of the spleen, the arterioles, capillaries and venules, practically have no wall except the endothelium. Indeed there are those who hold that even the endothelium is absent, and that the ultimate vascular spaces are lined with cells of the splenic pulp themselves. At any rate the opportunities for interchange between the splenic cells and the blood are for some reason extraordinary.

Lymphatics are present in the capsule, but not within the spleen (Mall). Not a little non-striated muscular tissue and some elastic tissue are distributed throughout the gland. Perhaps the most curious phenomenon within our knowledge of the behavior of the spleen is its remarkable enlargement during the digestive period. This is followed of course by contraction, the result being that the organ is continually undergoing changes in size synchronous with digestion. Moreover, it has been shown (Roy) that, at least in cats and dogs, there is a rhythmical contraction and relaxation of the gland at intervals of about one minute. Roy supposes that these movements promote circulation, and that they are dependent upon the plain muscle in the trabeculae. There is an inclination to ascribe the larger (digestive) changes in size to vaso-motor activity; especially as it is known clinically that epinephrin will cause remarkable contraction in the spleen, so much so that its administration preliminary to splenic operations is a valuable means of conserving the patient's volume of blood (Elliott & Kanavel).

Again one is surprised that a glandular organ so large, so generously supplied with blood, so exposing its intrinsic cells to the circulating blood as to be conspicuous in the act, so unique in its independence of general arterial pressure as exhibited in its expansion and contraction, and so related through its efferent blood stream with such important organs, (a) should not produce an essential internal secretion or be otherwise necessary to life, and (b) should be so little understood.

The post-natal spleen does not produce red cells except perhaps temporarily following severe hemorrhage, but it continues to produce a certain number of leucocytes. In the leukemias it (as well as the bone marrow, lymphoid tissues and liver) produces embryonic white cells in abundance. Indeed the process has been likened to the excessive production of embryonic epithelial and connective tissue cells in cancer and sarcoma; and leukemia has been spoken of (McCarty) as in effect a cancer of the blood. Since the normal activity of the spleen embraces destruction of worn out red cells, it is not difficult to conceive of the occasional presence in the body of some agency so stimulating the spleen as to cause it to overstep its normal activity and destroy red cells which are *not* worn out, so that anemia results.

The clinical sequence if liver hypertrophy upon splenic hypertrophy and of splenic hypertrophy upon liver hypertrophy cannot escape notice; indeed it frequently is uncertain in which organ the pathology is primary. Although undoubtedly the spleen sends to the liver toxic materials which it cannot handle, and although it may be conceived that on occasions the work thus thrown upon the liver will result in hypertrophy and cirrhosis, there is still no satisfactory information as to why, in a given case of splenomegaly, the magnitude of the work thrown upon the liver or the character of the toxic products sent to the liver should be out of the ordinary, unless indeed it be assumed that the explanation is found in the excessive destruction of red cells (and therefore the excessive material passed on to the liver) so common in splenomegaly. It is significant that Hanot's cirrhosis, for example, is probably cured by removal of the spleen.

Furthermore, one cannot overlook the fact that gastro-intestial hemorrhages attributed, whether correctly or not, to so-called latent hepatic cirrhosis, to patent hepatic cirrhosis, to splenic anemia, and perhaps to "idiopathic" causes, have

ceased after splenectomy. Witness the case reported in the January, 1917, *Annals of Surgery*, by Balfour. While the origin of unexplained hematemesis and melena is usually credited to the liver, the spleen may no longer be ignored. If the hemorrhage is not properly attributable directly to the spleen it may possibly be cured by splenectomy.

Most amazing information has recently been accumulated and is now being accumulated in reference to the beneficial effects of splenectomy in connection with splenic anemia, hemolytic jaundice and primary hepatic cirrhosis (Hanot). Furthermore, the next two or three years will give an answer as to whether splenectomy in pernicious anemia is remedial or wise.

The time has come when one can say with confidence that at least in adults the spleen ought to be removed as promptly as possible after an undoubted diagnosis of splenic anemia. The operation is certainly curative.

The disease as described by Banti was an advanced stage of the malady. Indeed, there seems to be no doubt that the hepatic cirrhosis, ascites, and hemorrhages are preceded by a stage of splenomegaly alone as the outstanding feature. While it is also true that Banti excluded cases of splenomegaly which might be ascribed to malaria, syphilis, or any other known infection, it is highly probable that removal of the spleen will frequently afford relief in at least certain instances of splenomegaly from such infections.

The operation itself is a distinctly dangerous procedure only when the patient has been allowed to become so depleted in general strength that any kind of surgical interference is hazardous. Against this hazard at this late stage, however, it should be remembered that medical treatment for splenic anemia is most certainly useless, and that under it there will be none but a fatal outcome.

A cure cannot be promised after the disease has progressed to the stage of cirrhosis and ascites, though not a few gratifying results in the face of these complications have been reported. The points, therefore, which deserve emphasis are accurate diagnosis and operative interference before complications have developed to handicap the outcome.

The cause of Banti's complex is interesting, but unsettled. There is an inclination to follow Warthin in his contention that the underlying cause is thrombosis of the splenic vein. He regards the whole pathologic picture as pointing to infective thrombophlebitis. In the face of this phelebitis there is splenic hypertrophy; and since splenic hypertrophy, whatever its cause, usually is associated with abnormal destruction of red cells and hemoglobin, we have here a plausible explanation of the anemia. Removal of the spleen, therefore, while not removing the cause, disposes of the essential harmful effects.

Wilson, from a study of all spleens removed for splenic anemia at the Mayo Clinic, states that he sees no reason at present to change from the commonly accepted theory that the pathologic process is one of chronic inflammation. He notes as the most constant features reduction of the pulp and lymphoid tissue, with great increase of reticulum.

In 1900, Minknowski described an affection now known as hemolytic jaundice, the significant feature of which is continuous abnormal destruction of red corpuscles with jaundice and enlarged spleen. He described it as congenital, of which there are two types, (a) familial, (b) nonfamilial. Later Hayem and Widal described the acquired type, which is apt to follow upon some acute infection. The jaundice has none of the characteristics of obstructive icterus, there being no bradycardia, no itching, no bile in the urine, and usually no pain. Nor is there commonly a decreased output of bile in the feces. Occasional cases are reported without splenomegaly. Urobilin and urobilinogen (evidences of hemolysis) are in the urine, there is secondary anemia, and frequently marked fragility of the red corpuscles. The liver may or may not be enlarged.

The acholuric jaundice is the symptom which brings the patient to the physician. It is characterized by crises, which seem to be more marked in the acquired type. The individual frequently lives comfortably, and it has been remarked that he is "icteroid rather than sick," so that the chief concern of the patient is the fact that he is troubled by what has been called a "cosmetic disturbance" rather than a disease. However, one should not dismiss the matter thus as comparatively trivial, since these individuals usually come

finally, if not early, to suffer from a degree of anemia which is an indirect menace to their lives.

It is said that Banti's operation, in 1894, was really performed for hemolytic jaundice, although the disease at that time had not been described. The first deliberate splenectomy for this affection was performed by Micheli, in 1911, though it is evident that prior to that time not a few people with hemolytic icterus had been splenectomized and cured without the proper diagnosis.

In June, 1915, Elliott and Kanavel reviewed the literature and collected the histories of 48 patients upon whom splenectomy had been done. The results have been most satisfactory. The jaundice begins to disappear in two or three days and is commonly gone inside of two weeks. The anemia is favorably affected, but not so promptly. The fragility of the red cells also gradually disappears. The 48 patients referred to above, and others operated upon since then, have been watched so closely that there can be no longer any doubt about the immediate relief for practically all and the permanent cure of those who have been operated upon for any length of time.

The fact that splenectomy cures the disease indicates that the hemolytic agent resides in the spleen, though it may be in the general circulation. At any rate, abnormal hemolysis seems to be constantly in progress; and super-imposed upon this steady hemolysis are crises of exaggerated cell destruction as evidenced by increased jaundice, increased urobilin, increased anemia, etc. Eppinger believes that as much as the total blood in the body at any one time may be destroyed during one of these crises, which is evidently a dangerous drain upon the hematopoietic organs.

Eppinger conceives the etiologic factor to be altered splenic function, which he calls "hypersplenism" as analagous, for instance, to hyperthyroidism. Whatever may be the pathogenesis, the former hepatogenous theories are set aside by the clinical results of splenectomy. If the spleen is not the cause, it is certainly an essential factor in the pathologic picture.

Elliott and Kanavel report that the spleens removed in their cases show little proliferation of connective tissue if, indeed, any at all. There was frequently a loss in the follicles, while the spleen sinuses were dilated at times, but constant infiltration of the pulp was more typical. The endothelium was proliferated and the red cells were less sharply outlined and stained less clearly than normal.

In the light of the very gratifying results following splenectomy for splenic anemia and hemolytic jaundice, the question naturally arose whether removal of the spleen might not cure pernicious anemia. In 1913, Eppinger, reasoning from the fact that splenectomy stopped hemolysis in hemolytic jaundice, removed the spleen for pernicious anemia. In the same year Decastello, upon the same general grounds, did likewise. In the same year Klemperer, having noticed that splenectomy necessitated by trauma of the organ was followed not only by leucocytosis, but also by polycythemia, likewise performed splenectomy for pernicious anemia.

The immediate results were so gratifying that their example was promptly followed by scientific operators everywhere. Up to the present time between 150 and 200 splenectomies probably have been done for this disease, and within a short time the question as to whether or not the step is justifiable will be answered.

At the present time the reports are not altogether encouraging. The disappointing feature lies in the fact that while nearly all these patients, if properly selected, improve materially for from two to six months, it seems quite difficult to sustain this improvement. The general clinical condition and the blood picture respond favorably; but the histories of the patients who have now been operated upon for as long a time as two or three years indicate that only a few can be expected to show improvement for this length of time.

However, in estimating the value of splenectomy one must bear in mind the ordinary course and outcome of the disease. While under conservative treatment, or under no treatment, the disease is frequently characterized by marked remissions in its severity, very few people live as long as two or three years. One must remember that pernicious anemia is comparable in fatality to, and is less controllable than, cancer. Indeed, the fatal issue has been the one certainty of the disease. Although, therefore, the perma-

nently curative value of surgical interference in pernicious anemia is still problematical, it can certainly be said that improvement more consistently follows splenectomy than any other form of treatment heretofore utilized. So many patients have now been splenectomized for this disease that it cannot be said that this comparatively uniform improvement is a coincidence.

The view has been advanced that the essential difference between hemolytic jaundice and pernicious anemia is the fact that the bone marrow is able to compensate for the hemolysis in the former and is not able to do so in the latter; so that in pernicious anemia bone marrow disability is responsible for the lethal outcome. It would seem reasonable if this view is correct that eventually pernicious anemia may be treated by splenectomy at such an early period as to forestall this bone marrow disability, and that, therefore, the results may then be as good as in hemolytic icterus.

Pathologically it is claimed that the characteristic feature is a thickening of the entire wall of the splenic artery, particularly as to the media. The idea is that sufficient obstruction occurs to force blood into the pulp areas where the red cells are destroyed. This view, however, is subject to criticism in that if it were true splenectomy ought to stop the hemolysis and cure the disease—which cannot now be said to be true. Furthermore, upon the basis of this essential pathology the remissions in the ordinary course of the disease would not be explained.

Wilson's study fails to reveal arteriosclerosis. He notes a significant increase in lymphoid tissue and no pigment.

Should it turn out that splenectomy is of no more value than a mere agency to produce a well-defined remission in the symptoms it will of course have little standing in the therapeutics of pernicious anemia. If, on the contrary, the operation can be done at such an early date as to control hemolysis, it will undoubtedly replace other methods of treatment.

While nearly two-thirds of patients subjected to splenectomy have shown prompt and distinct improvement, nearly two-thirds of the individuals who were so improved have later either died or failed to maintain the improvement. Also, of none of those patients whose improvement has been maintained can it be said that they are entirely well. In no case is the blood picture known to have returned to normal. Splenectomy seems frequently justifiable; but in no case can a cure be promised.

Many, perhaps most, patients will require to be built up to splenectomy by preliminary blood transfusions, and many may require similar repeated transfusions following splenectomy. Indeed, splenectomy in pernicious anemia should perhaps not be considered without simultaneous consideration of repeated massive transfusions. There are those who believe that the benefit from transfusion itself is comparable to the benefit from splenectomy. This is a question which will likewise be worked out within the comparatively near future. An individual who does not respond well to transfusion should not be subjected to operation.

The best results may be expected in comparatively young patients, in whom the disease is early, whose blood pictures are relatively good, whose spleens are large, and who are the subjects of excessive hemolysis (Miller, McClure).

Conditions opposite those enumerated in the last paragraph constitute unfavorable factors, as do also spinal cord symptoms.

Since there is some resemblance in hemolytic jaundice and splenic anemia to Hanot's cirrhosis, a few splenectomies have been done with the idea of relieving this last-named condition. The cases to date are too few to warrant conclusions, but there is much of promise in connection with the operative treatment.

Balfour has been much impressed with the effect of splenectomy upon three patients who had enlarged spleens with anemia and positive Wassermanns, and in whose spleens the spirochetes were found in large numbers. While prior to operation it was impossible for the patients to maintain negative Wassermann reactions when medicinal treatment was stopped, yet after operation the negative reaction seems to be constant and the clinical symptoms seem to be cured.

The encouraging results referred to in all the foregoing classes of cases make it certain that many patients with splenomegaly and anemia from any cause will hereafter be studied with the possibility

in mind that they *may* be benefited by appropriate surgical intervention.

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TORSION OF FALLOPIAN TUBE RESULTING FROM SMALL OVARIAN CYST

By Joseph William Holland, M.D.,
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Torsion of the pedicle of cystic tumors of the uterine adnexa is comparatively common. The twist most frequently involves the stem of pedunculated growths, and is said to occur most frequently in dermoid cysts of the ovary.

The condition has long been recognized, and was probably first mentioned by Rokitanski in 1841.

McKerron,[1] in 1893, reveiwed 1,290 reported cases. He found that 12.5 % occurred during pregnancy, 22.7 % during the puerperium, while only 8 % occurred in non-pregnant women.

Saues[2] in 51 operations in cases of ovarian cysts found nine, 17 %, with twisted pedicles. The condition is most apt to obtain in large freely-movable growths, especially in large cystic growths with long pedicles. Growths which occupy a position suprapelvic are most apt to suffer torsion of the pedicle, while in those which become fixed in the pelvis torsion rarely occurs.

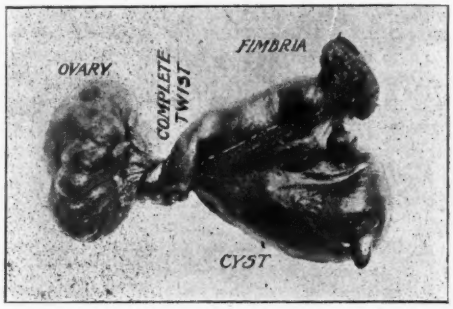

Fig. 1.
Torsion of Fallopian tube caused by rotation of parovarian cyst.

In large intraligamentous growths in which the Fallopian tube is spread out on the surface of the growth, torsion of the broad ligament, including the tube, sometimes occurs. Torsion of the pedicle of parovarian cysts, including those in which the tube is involved, occurs less frequently than is the case in ovarian growths.

Many cases of torsion of the Fallopian tube, not occurring in association with cysts, have been reported.

Bevers[3] reported two cases of fibromyoma of the broad ligament with torsion of the broad ligament and tube.

Norris,[4] in reviewing the literature, found a report by Aulhorn of a case of torsion of a normal tube with strangulation in a woman three months pregnant, and Stark[5] reported a similar case.

Anspach[6] reviewed 87 reported cases of torsion of the tube in pyosalpinx and hydrosalpinx. He stated that a correct diagnosis had not been made in any of

the cases. In 95 cases compiled by him, 62 were hydrosalpinx, 12 pyosalpinx, 5 tubal pregnancy, 2 malignant disease, 2 cyst of the tube, and in the remaining 12 the condition was unclassified. He found that torsion occurred more frequently on the right side.

Harrigan[7] reports a case of ovarian cyst with twisted pedicle in a child twelve years old. Vineberg (ibid) reported the same condition in a child nine years old.

Numerous other instances of torsion of the pedicle of ovarian growths in young children have been reported, in one case the child being aged three years.

Damianos[8] reported a number of cases of torsion of the adnexa occurring in inguinal hernias in nurslings.

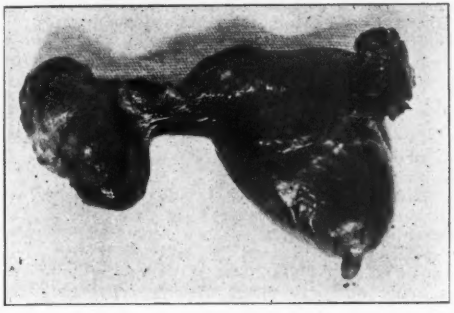

Fig. 2.
The same as Fig. 1 with the tube untwisted.

Prevalence of twisted ovarian tumors varies widely in the experience of different operators, — Kustner 47 %, Martin 5 %.

Fassati estimates that 27 % of parovarian cysts suffer torsion of the pedicle. This seems too high.

The frequency of occurrence of torsion of cysts and other growths of adnexa complicating pregnancy is striking, and leads one to the conviction that this condition provides a more serious and frequent complication of pregnancy than uterine growths. Many causes of torsion have been suggested by various observers. Those which most frequently obtain are pregnancy, alternate distention and evacuation of bladder and rectum, peristalic action of the bowel, especially of the sigmoid flexure, sudden jars, violent exercise, and abnormal conditions existing in adnexa on the opposite side. In the case here reported, the only suggestive cause of the torsion was the violent exercise engaged in during games of basketball.

SYMPTOMS

In the majority of cases, there is a history of previous attacks sometimes lasting through several months. In one case reviewed there was a history of a large number of attacks extending through three years. The onset of the symptoms is usually sudden, and in the majority of right side cases a diagnosis of acute appendicitis has been made, the prevailing symptoms being those associated with acute inflammations about the appendix. Pain is usually the most commanding symptom. Febrile reaction is seldom great. There is less abdominal tenderness and muscular rigidity than prevails in acute inflammatory conditions of the intestinal peritoneum. The white cell count is seldom high.

Other conditions for which torsion of the pedicle has been mistaken frequently are acute salpingitis and tubal pregnancy. The opinion prevailing generally among a great many observers of this condition is that the only sure method of reaching a correct diagnosis is by rectal or vaginal examination under anesthesia, and even with the aid of this most valuable agent it is frequently impossible to differentiate a small ovarian or parovarian cyst with twisted pedicle, in which the tube may or may not be involved, from pyosalpinx, hydrosalpinx, or small tubal pregnancy.

The importance of early diagnosis and prompt operation can not be too forcibly emphasized because complete torsion invariably produces strangulation with sloughing of the distal portion attended by infection of the peritoneal cavity. The greater liability to occur during pregnancy and the puerperium and the gravity which the complication bears to those states, demand the greatest alertness on the part of those responsible for their safe conduct.

CASE REPORT

L. M., white, aet. 18, college student.

PERSONAL HISTORY.—Had always been a "delicate" child. Menstruation began at the age of fourteen years. Nothing notable about periods.

HISTORY OF PRESENT TROUBLE.—The patient suffered an attack of abdominal pain associated with nausea and slight febrile reaction in July, 1916, and was confined to bed a few days. Abdominal tenderness and pain were located over right lower quadrant of abdomen. Tenderness continued in this region for about 10 days. The next succeeding period was similar to previous periods. About one week prior to entering the hospital, the patient suffered an attack of pain in the right lower quadrant of abdomen with sudden onset, which lasted about one-half hour, attended with slight nausea, followed by brief period of tenderness. The attack followed a game of basketball.

SEPTEMBER 25, 1916.—Following a game of basketball the patient suffered an attack of acute pain, onset very sudden, confined to the right lower quadrant, point of maximum pain about one inch below McBurney's point. Nausea and vomiting succeeded the onset of pain after a short time. There was a slight febrile reaction, noted by the physician in charge, Dr. Henry M. Fitzhugh, a few hours after the onset.

SEPTEMBER 28, 1917.—The patient was conveyed to the University Hospital, a distance of forty miles, in an automobile, arriving late in the evening.

PHYSICAL EXAMINATION.—On being admitted to the Hospital, the patient is found to be a well-developed, but small, white girl. Lungs and heart are negative. The abdomen is slightly distended and generally rigid, rigidity more marked over the right side. Palpation over the right lower quadrant causes acute muscle spasm and elicits complaint of tenderness. The patient is suffering very slight pain. Abdominal palpation as to abnormal growths is negative. Temperature, 99° F. Pulse, 105. Examination of urine shows albumin and many tube casts. W. B. C., 13,000. No dysuria. The patient does not appear to be very sick.

DIAGNOSIS.—Acute appendicitis in subsiding stage; acute inflammation of uterine adnexa considered.

SEPTEMBER 29, 1916.—The patient was anesthetized with ether. Vaginal examination under anesthesia demonstrated a mass about the size of a small orange in the right pelvis, freely movable, irregular in outline, distinctly separated from the uterus and distinct from the right ovary, which could be palpated as a separate mass. Left ovary and tube were normal. Uterus in normal position and size. The patient was immediately prepared for abdominal section and the abdomen opened through a right rectus incision. On opening the peritoneal cavity, there was an escape of 100 c. c. of sanguinous fluid. A mass could be felt in the right pelvis, freely movable. There were no adhesions. Upon delivery of this mass it was found to consist of a small parovarian cyst, which had become rotated from left to right around the Fallopian tube. The torsion involved the mesosalpinx and tube external to the mesovarium. The ovarian vessels were not involved. The tube and cyst distal to the cyst were of a pearly-black color. The tube was much swollen, very dense, and leathery. The cyst was very tense. The ovary was somewhat enlarged and contained many small cysts. The right tube, cyst, and ovary were removed. The proximal end of the round ligament was sutured to the right cornu of the uterus. The appendix was found to be in condition of sub-acute inflammation and was also removed. The patient made an uneventful recovery and was discharged from the Hospital October 13, 1916.

NOTE.—Appended is the pathological report rendered by Dr. Howard J. Maldeis, who examined the specimen. The specimen had undergone some shrinkage at the time examined by him and when photographed.

"Specimen No. 4135.—The Fallopian tube is firm, dark-red in appearance, and shows a definite twist near the uterine end involving the mesosalpinx, which, on relieving the twist, becomes flattened out. It is irregular in outline and varies in diameter. The length from its fimbriated extremity to the twisted portion is 7 cm. and including the twist, when the tube is straightened, measures 9 cm. The transverse diameter of the portion distal to the twist varies from 1.3 to 1.5 cm. On section, it is almost black in appearance and on very little pressure a definitely organized clot can be expressed.

"The ovary is somewhat enlarged, soft to the touch, although in places it is firm and in general appearance a greyish-white, and irregular in outline. On section, several small cysts containing a semi-solid fluid of yellowish color can be made out. It also presents several small hemorrhagic areas. It measures 5 x 2.5 x 2.8 cm.

"The cyst is very dark-red in appearance, soft and fluctuating, and has no pedicle. It occupies, in general, the position of the organ of Rosenmuller. There are two very small firm nodular projections extending from the upper and lower portion of the cyst. The cyst measures 4.5 x 4 x 2.5 cm. The inner wall is smooth and grey in color and measures 2 mm. in thickness. The cyst contains 37 c. c. of a very light yellow fluid. Specific gravity, 1,006. Very low albumin content. Microscopic examination shows an occasional cell of flattened character, the nuclei showing poor staining properties and a few red blood corpuscles.

"MICROSCOPIC SECTION.—Tube shows a thin rim of normal structure and contains organized clot. Ovary shows chronic changes with beginning cystic degeneration. Cyst wall is lined with very thin flattened epithelial cells beneath the basement membrane of which there is a small amount of fibrous connective tissue and ordinary connective tissue cells."

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AUTHORS' ABSTRACTS

Surgery, Gynecology, Obstetrics and Genito-Urinary Disease

The Surgical Treatment of Dyspepsia. C. W. Roberts, Atlanta, Ga. The Journal of the Medical Association of Georgia, Vol. VI., No. 10, February, 1917, p. 195.

Patients presenting themselves with a train of symptoms usually spoken of under the head of dyspepsia or indigestion, by the proper analysis of their cases, may be divided into two general classes.

First, the purely medical cases to which should be applied the time-honored remedies that have proven so satisfactory in the hands of careful medical men. The etiology of these cases depends upon excessive or deficient secretion of gastric juices, impairment of the gastric muscles, inflammation of the mucous lining of the stomach, cardiac insufficiency, arterio-sclerosis, cirrhosis of the liver, locomotor ataxia, chronic dilatation and prolapse and the gastric neuroses. Surgery is not advised in this class of cases, being much too severe an agent to use as a psycho-therapeutic means.

Second, the purely surgical cases, which are to be cured only by the application of proper surgical procedures suggested by the etiology of the case under consideration. In this class will be found the majority of patients complaining of stomach distress, the underlying pathology being gastric or duodenal ulcer, gall stones or inflammation of the gall bladder, chronic appendicitis or adhesions about the ileo-cecal valve, lesions of the female reproductive organs, and lastly, that malady which should command our most earnest attention, found with increasing frequency lurking in this region of doubt and tragedy, namely, cancer of the stomach.

In order properly to classify these and thereby offer helpful advice, we must get ourselves out of the habit of looking upon indigestion as having a definite significance, *per se*, and realize once for all that it is a confusing term, presenting a more confusing group of symptoms that can convey no valuable information to an intelligent mind except that the patient using it has some sort of trouble for which he holds the stomach accountable, and quit exusing ourselves for simply prescribing a bitter tonic and letting our patients with indigestion go on, failing to realize that back of this complaint and calling in this unpretentious way there is a pathologic cause that demands the very best that is in us in order that it may be discovered and our patient be given the benefit of whatever relief may be afforded in the particular case. (It is, therefore, just as grave an imposition on the patient to treat his indigestion medically when it is the result of a surgical lesion as vice versa, and it is my desire to present the surgical phase of this subject in such convincing form as to satisfy the most skeptical among you that there is a large class, an ever-increasing class, of stomach sufferers that may be relieved by surgery and surgery alone.)

Given a patient of long-standing stomach symptoms in which the usual test meal affords no light, it would seem to me that the chief end of service to that patient had been obtained when the necessity for surgery had been realized and the patient sent with a diagnosis of surgical, abdominal trouble.

Concluding, I would say that until laboratory methods are more constantly borne out by the finding at the operating table or in the dead house, and until more precise diagnostic methods have been discovered, when a patient comes to us complaining of pain, uneasiness, dyspepsia, symptoms referred to the stomach or general abdomen—he needs a diagnosis—and if we are able to place ourselves in our patient's position and still offer the same advice, there is but one way to make a definite diagnosis, and that is by exploratory laparotomy. Explore more and guess less.

Ureter Catheter Drainage in the Treatment of Renal Infections, with Special Reference to the Infected Hydronephrosis Complicating Pregnancy. John R. Caulk, St. Louis, Mo. The Journal of the American Medical Association, Vol. LXVIII., No. 9, March 3, 1917, p. 675.

The author introduces the subject with remarks upon the progress of urology, which he says is due in a great measure to conservatism and accurate and scientific investigations. The cystoscope and ureter catheter are placed in the foreground as the chief factors in the development of this branch of medicine. The value of the ureteral catheter as a means of therapy is then discussed. The author mentions the manifold phases in which the catheter can be employed, such as in the treatment of acute and chronic pyelitis, hematurias, ureteral fistulas, calculi, etc. He considers then renal infections with retention, particularly the type of retentions occurring during pregnancy. He grades renal retention into three degrees, which Perineau has previously described. These degrees are dependent upon the amount of distention and destruction of the elastic tissue and muscle fibres of the renal pelvis, and on the accompanying renal damage. In the first and second degrees of retention with infection where the muscle fibres of the pelvis and kidney cortex are not too much disturbed, the ureteral catheter is of great service, often producing apparent cures, and if not cures, certainly marked improvement in the patient's general condition, so that if surgery has to be done the individual is in much better shape for it. In pregnancy the author has had astounding results with drainage of the renal pelvis with a catheter for the so-called pyelitis of pregnancy, which he believes is not a pyelitis, but pyelonephritis with retention. The profession is urged not to delay too long in treating such patients with fever, chills and pusy urine by internal medication, but to have the

kidney relieved by drainage with the ureteral catheter as early as possible in order to spare the cortex from over-distention and destruction. The catheter can be left in place several days at a time. In some instances single catheterization has served to affect a prompt restoration of function, and also the patient's general health to normal. He believes that if this were done there would be far less destroyed kidneys and more full-term babies.

Sterility Studies, with Particular Reference to Weak Spermatozoa; Diagnosis and Treatment. V. D. Lespinasse, Chicago, Ill. The Journal of the American Medical Association, Vol. LXVIII, No. 5, February 3, 1917, p. 345.

In determining the cause of sterility of a given couple it should be considered under the following heads:

1. Obstruction in the sexual tract of the male. Semen contains no spermatozoa. The possible operations are vaso-epididymostomy, either with the vas and epididymis of the same side or the vas and epididymis of opposite sides; Lespinasse sac operation, resection of the vas and end-to-end union with the vas on the same side or with the vas on the opposite side.

2. Obstruction in the sexual tract of the female. Location usually the tubes or the cervix. Tubal cases are diagnosed by history of a disease known to cause obstruction and second by laparotomy. Treatment is surgical. Cervical obstructions are best treated by uterine insemination.

3. Absolute failure or imperfect development of the essential male elements. Diagnosis short vialility time of the spermatozoa as shown by (1) slow motion and (2) shorter time during which they move. The normal rate of movement (always timing the fastest sperms) across the one-sixth field, No. 1 eye piece, is from five to eight seconds with semen one hour old and kept at body temperature the entire time. In the weak cases the length of time increases up to as high as 30 or 40 seconds. In some there is no progressive motion, simply a vibritile motion in situ. Treatment: General building up, glandular therapy and direct uterine insemination.

4. Absolute failure, or imperfect development, of the essential female elements. Diagnosis of ovulation failure is made by inference clinically or by direct inspection of the ovary at operation.

5. Alterations in the secretions of the female sexual tract so that her secretions are destructive to the life of the spermatozoa. Diagnosis is made in two ways: (1) The coitus test and (2) by mixing the secretions on the slide and examining from time to time.

Resection of the Descending Colon and Rectum. Frank H. Lahey, Boston, Mass. The Boston Medical and Surgical Journal, Vol. CLXXVI., No. 8, February 22, 1917, p. 275.

Free mobility, absence of metastases by palpation and X-ray, and absence of involvement of the neighboring organs, are absolute essentials before resection or amputation of the rectum should be undertaken.

Resection for diverticulitis is a dangerous procedure because of the infection present. Drainage with later resection, if necessary, is the safest form of treatment. Colostomy will occasionally be necessary.

Mobilization of the splenic flexure makes colectomy an operation not technically difficult.

End-to-end anastomosis in the large intestine is mechanically and functionally a better procedure than lateral anastomosis, because of pouching of the blind ends and because of the strain put upon them and the consequent danger of leakage.

The interlocking stitch of the author, published in the *Annals of Surgery* for 1910, is in his hands the safest and most satisfactory form of suture in end-to-end anastomosis of the large intestine. All other sutures constrict if pulled too tightly, or leak on account of epiploic appendages' not being caught in the grasp of the suture.

The making of a perineal anus prolongs the operation, increases the danger of slough, and increases the danger of recurrence.

The abdominal anus is best made near the umbilicus, where there is the least motion, and with a considerable redundancy of bowel upon the abdominal wall, so that a rubber ring does not slip over it.

The mortality of resections for trauma, such as lacerations and perforations of the bowel, will often be avoided by a temporary colostomy with secondary establishment of the fecal current.

The Transplantation of Fat in Prostatic and Kidney Surgery. Irvin S. Koll, Chicago, Ill. The Journal of the American Medical Association, Vol. LXVIII, No. 7, February 17, 1917, p. 536.

In the desire to use some means less mechanical than the various procedures suggested for the prevention of post-operative hemorrhage in suprapublic prostatectomy, nephrotomy and pyelotomy, this work was undertaken.

The experiments were carried out upon dogs. The kidneys were traumatized by crushing and lacerating and nephrotomized in various ways; also decapsulated, and fat from either the same animal or previously obtained from another dog was sutured or tied into or over the wounds. Some of the transplants were infected with colon bacilli and some with staphylococci. It was in every instance very striking to see how promptly the bleeding stopped. The kindneys were removed at periods following the operation varying from one day to six months.

On account of the anatomy of the prostate in the dog, the human prostatectomy could not be simulated. By making pockets out of flaps of the bladder wall it was possible to study the effect on fat transplanted into the bladder. In each instance the fat rapidly disintegrated and completely disappeared from these formed pockets.

The fat can be taken from the abdominal incision of the patient if he is sufficiently adipose, or, better still, obtained from a dog previously.

1. Fat is a valuable hemostatic following prostatectomy and in operations upon the kidney.

2. The change into fibrous connective tissue is complete in from three to four months.
3. Infection does not alter the metaplasia, though it delays it.
4. When placed over a decapsulated kidney, a new capsule is formed.
5. Incision into the healthy kidney is followed by extensive necrosis, which is replaced by fibrous tissue.

Organotherapy in Gynecology. Frank Benton Block and Thomas H. Llewellyn, Philadelphia, Pa. The American Journal of Obstetrics and Diseases of Women and Children, Vol. LXXV., Whole No. 471, March, 1917, p. 357.

This report is based upon the experiences of the authors with the use of internal secretory organic preparations in the treatment of various common gynecological disorders seen in the dispensary. Their experience with corpus luteum extract has shown that the preparation made from the cow is as potent as the one made from the sow. Small doses such as two grains, three times daily, are recommended in all cases where there are symptoms of deficient ovarian activity, such as hot and cold sensations, dizziness, headache, nervousness, etc., providing that there is still some ovarian tissue in the body. In cases where these symptoms are due to complete removal of both ovaries, large doses of corpus luteum will be required for relief of these distressing symptoms. In certain cases of chronic pelvic inflammatory disease, the combination of local treatment and organotherapy may be preferable to the operative treatment.

Thyroid extract has been used with some success as a stimulant to ovarian activity, being frequently substituted for corpus luteum extract on account of the expense of the latter. It has proven of unusual value in a few cases of delayed sexual development. Pituitary substance, in addition to its stimulating action on the uterine muscle, has a marked influence in counteracting ovarian secretion. Therefore it is of great value in checking uterine hemorrhage. In cases of menarchial hemorrhage, pituitary extract has acted almost as a specific.

The authors insist that each case must be studied on its own merits and frequently many combinations or preparations will have to be tried before the proper one is found.

Intracanalicular Papilloma. Edward Starr Judd, Rochester, Minn. The Journal-Lancet, Vol. XXXVII, No. 5, March 1, 1917, p. 141.

A study of 100 consecutive cases of discharging nipples. In 50 out of this number, a serohemorrhagic discharge was present; in the remaining 50 some other form of discharge was described. Carcinoma apparently is the most common lesion producing a discharge from the nipple. However, it was almost invariably associated with a tumor in the breast. Usually, the tumor was present some time before the discharge began. In 26 % of these cases, chronic cystic mastitis was present; 12 of them were in the first group of fifty, and 14 in the second. However, in some of our cases of chronic cystic mastitis, the discharge may have been from a duct papilloma, for often these tumors are very small and might easily be overlooked. This series seems to lend evidence to the contention that a hemorrhagic or serohemorrhagic discharge from the nipple in the absence of a palpable tumor is most often produced by a benign intracanalicular papilloma. In view of this fact, treatment should be conservative, particularly in young women. In older patients, especialy if the condition is associated with chronic cystic mastitis, the mammary gland should be removed. If there are indications of malignant changes, a radical operation is advisable.

Blood Pressure Changes Induced by Hot and Cold Applications Upon and Within the Abdomen. Frederick S. Hammett, with the Assistance of E. W. Tice and E. Larson, Los Angeles, Cal. The Journal of the American Medical Association, Vol. LXVIII., No. 8, February 24, 1917, p. 621.

The experiments to determine the effect upon blood pressure of hot and cold stimuli locally applied were made on cats. The cats were anesthetized and the carotid pressure was recorded through a mercury manometer. The stimuli were calibrated and application made in such a manner that effects of pressure and other factors which might affect blood pressure were reduced to a minimum. Controls were run in all cases.

The application of heat externally to the abdomen produces a rise in blood pressure which returns to normal on removal of the stimulus.

The application of cold stimuli externally produces but slight change, any variation occurring being an increase in blood pressure.

The difference in effects of hot and cold stimuli is one of degree and not of kind.

In determining the effect of internal application, the abdomen was opened and the blood pressure allowed to return to normal before the stimuli were applied. The skin and cut surfaces were protected and the stimuli applied entirely within the abdomen.

With heat stimulation internally there is a preliminary rise in blood pressure of short duration followed by a decided drop below normal with another drop upon removal of the stimulus and a then gradual return to normal.

With cold stimulation internally there is also produced a marked drop in the blood pressure which gradually returns to normal on removal of the stimulus.

With the above facts in view, it is evident that hot or cold applications upon or within the abdomen produce marked changes in blood pressure. Any pack used within the abdomen during an abdominal operation should be at or near the temperature of the body, for a variation from this temperature tends to add to the shock of the operation.

(Continued on page 685)

MILITARY, RAILWAY AND EMERGENCY SURGERY

MALARIA AS A FACTOR IN MILITARY EFFICIENCY*

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The importance of malaria as a factor in military efficiency is apparently not recognized to the extent desirable, in view of the practical certainty of military operations on a large scale on the western front of the European theatre of war. As observed in some Comments and Criticisms in the *Military Surgeon* for April, 1917, "It is quite likely that numerous carriers of this disease will exist among the troops imported and returning from tropical countries." It is said, further, that "It might be expected that there would be an increased incidence of malaria among the regiments associated with these foreign organizations during the summer months, as, according to Manson, at least three species of anopheles mosquitoes, which have been found to foster the malaria parasite, are known to exist in Europe."

Granting the reasons opposed to the belief that malaria may be spread among our troops to a considerable degree, or among the civil population during or after the war, it requires to be remembered that, for illustration, so healthy a community as Greenwich, Conn., was thoroughly infected through returning soldiers from Cuba, temporarily taken care of at Montauk Point, and that similar experiences have been reported through the British periodical medical press.

Among the suggestive evidence in support of the conclusion that the danger is more real than apparent, the following abstract of an address on "Malaria in Flanders," by E. Reneaux, is of interest. After observing that although acute malaria has long had only historical interest in Belgium, he states that the disease had never completely died out. A few chronic cases have from time to time been reported during the last few decades, "but the wartime conditions, the flooding of the country as a protection against the enemy, and protective hygienic measures have led to a flaring up anew of the old embers of malaria and nineteen cases of the disease have been identified in the Bourbourg and Graveline hospitals. Malaria had not at first been suspected and the cases had at first been diagnosed as pneumonia, la grippe, febrile gastric disturbances, etc. None of the patients had even been in tropical countries."

Aside from its important military medical aspects, the statistical considerations are well deserving of some attention at the present time. The elementary facts of our Civil War experience have been utilized by Prinzing in his remarkably thorough study of the subject of "Epidemics Resulting from Wars," recently issued, with commendable enterprise, by the Carnegie Endowment for International Peace. The information as given by Prinzing was, of course, derived from the 3d volume of the "Medical and Surgical History of the Civil War." He, however, also refers to the epidemic of malaria following the war of 1859.

Prinzing omitted to refer to the report on the origin and spread of typhoid fever in United States military camps during the Spanish War of 1898 by Reade, Vaughn and Shakespeare, who enlarge upon the subject of coincident malaria and typhoid fever and who, with reference to the 2nd Division of the 7th Army Corps, stationed at Jacksonville, Fla., report a malaria case rate followed by typhoid fever as high as 4.8 % for all of the regiments, with a minium of 0.9 % for the 2nd Virginia and a maximum of 6.8 % for the 4th Virginia. In the aggregate, in the 2nd Division, with a mean strength of 10,759, there were 1,676 cases

*Abstract of the report of the Chairman of the Committee on Statistics of the National Committee on Malaria Eradication, New York, N. Y., June 7, 1917.

of malaria, but in addition thereto there were 81 cases of malaria followed by typhoid fever and 2,044 cases of typhoid fever preceding malaria.

Equally suggestive was the occurrence of malarial diseases in the 2nd Army Corps, stationed at Camp Alger, Va., where, in a mean strength of 21,988, there occurred 4,083 cases of malaria, but only 63 cases of typhoid fever with preceding malaria, equivalent to 1.5 %. Some of the regiments were entirely free from this form of malaria, but the 1st Connecticut experienced a rate of 8 %. A suggestive conclusion in this direction, advanced by the special commission investigating the subject, reads that "those soldiers who had fevers of short duration and which were generally designated as malaria fever, were seven times less liable to subsequent attacks of typhoid fever than those who had not suffered with these milder types." Or, in other words, "of 1,951 men who had recognized typhoid fever, 63, or 3.2 %, had preceding attacks of supposed malarial fever, while 1,888, or 96.7 %, had no such preceding attacks."

These references are merely fragmentary evidence of the possibly practical importance of malaria as a factor in military efficiency. In addition, of course, there is the equally serious risk of the reinfection of areas now practically free from the disease, but in which the anopheles mosquito, or carrier of the disease, is known to exist. It would, therefore, seem an entirely appropriate suggestion at the present time that attention should be directed to the possible importance of malaria in military operations and the adequate protection of the troops and the best possible safeguarding of the troops against outbreaks, largely attributable to the neglect of recognized safety precautions.

From a broader point of view, there is the urgency of a more qualified analysis of the available malaria statistics of the Southern states, which are being collected through the U. S. Public Health Service, through local boards of health, and through the Rockefeller International Health Commission. Aside therefrom, it would make a most useful contribution to the subject if the morbidity and mortality of the United Fruit Company among its employees on its tropical plantations were subjected to critical and extended analysis. Among recent scientific contributions, indicative of more exhaustive malaria investigations than have heretofore been made, with a due regard to the statistical aspects of the disease, reference may be made to a report upon malaria in the central provinces of India by Major W. H. Kendrick, issued by the Government of India in 1914. This report is a thoroughly descriptive account of the local areas of excessive incidence, with a due regard to cultural features, especially as to cotton and rice plantations. The report suggests a thoroughly specialized statistical study of the incidence of malaria in such sections of the Southern states as have within recent years been opened up to rice cultivation. The same conclusion applies to the subject of irrigation in the Southern states, which is rapidly being extended to large areas of lowlands difficult of adequate drainage and the complete elimination of stagnant water or other breeding places of mosquitoes.

The economic aspects of the problem are also largely statistical, as best illustrated by the excellent work which is being done by the U. S. Bureau of Entomology at Mound, La., under the efficient direction of Mr. Van Dine, in co-operation with the owners of a large plantation, which has been made subject in its entirety to the more or less burdensome conditions of complete experimental control. Among other promising indications of an aroused intelligent interest in malaria eradication, reference may be made to an address by Mr. Harold F. Gray on "Malaria Control in California" and a paper on "Successful Methods of Attack on Malaria in California," with some interesting statistical data, by Prof. Wm. B. Herms, of the University of California. The economic aspects of malaria eradication have been briefly summarized by Assistant Surgeon-General John W. Trask in a paper read before the American Public Health Association in 1916.

The importance of economic entomology in its relation to war is best emphasized in a very recent special publication

of the Government of Australia, which has given serious concern in advance to the healthfulness of the regions likely to be utilized for settlement purposes on the basis of future land grants to the Australians serving with the British forces in the European theatre of war. It is recognized that the returning troops may introduce malaria into the commonwealth, or into sections where the disease is now unknown, but where the anopheles mosquitoes exist and are more or less widely distributed. The report of the Australian Government is an exceptionally valuable contribution and gives evidence of a thoroughly efficient quarantine administration. The possibilities of malaria control through quarantine methods have not been sufficiently recognized, but their value has been well brought out by the experience of Cuba in connection with rigorous methods of the blood examination of malaria-infected Negro immigrants from Jamaica, Haiti and San Domingo.

It is to be hoped that the importance of economic entomology will be recognized by the U. S. Government in the planning of permanent camps or for recruiting and military training purposes and that a sufficient number of medical entomologists will be attached to the Army Medical Service, so that, if possible, serious outbreaks of the disease may be prevented. As a safeguard against a repetition of the disastrous experience of 1898, it is strongly to be recommended that the War Department be required to issue monthly returns of the morbidity and mortality of the troops on the mainland of the United States, which could not possibly be construed as a measure contrary to the military interests during a time of war. Statistics of morbidity, if they are to be useful at all, require to be made public without undue delay, so that the correctional measures required for disease control may be inaugurated before local unfavorable conditions approach to the dimensions of a serious epidemic.

Finally, in this connection, it may be recommended that a resolution should be adopted urging upon all municipalities where malaria is known to prevail to a more or less serious degree, to require the reporting of malaria cases on the part of the attending physician within one week after their appearance, to the local authorities, and subsequently, but also without undue delay, to the Assistant Surgeon-General, in charge of the morbidity statistics of the U. S. Public Health Service.

AN ABSTRACT OF U. S. ARMY REGULATIONS GOVERNING EXAMINATION OF RECRUITS

By Thompson Frazer, M.D.,
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In view of the probability that during the next few weeks a large number of physicians will be enrolled in the Medical Reserve Corps, it seems advisable that we familiarize ourselves in advance, so far as is possible, with some of the duties we shall be called upon to perform.

One of the most important of the medical officer's duties will be the examination of recruits, and in this connection the "Regulations Governing Physical Examinations Under the Selective Service Act of May 18, 1917," are of great interest.

In comparing these Regulations with earlier instructions concerning physical examinations one notes that certain deviations from the normal which in times of peace are sufficient for rejection are to be disregarded in times of war.

"It is important" (paragraph 1 of the Regulations), "to begin with, that the examining Physician should realize that there will be a certain proportion of men among those presenting themselves for examination who will endeavor to obtain exemption by dissimulation, varying from exaggeration of an existing condition not disqualifying to downright malingering, and he should be prepared to protect the Government and himself against such attempts at deception."

For the benefit of those physicians who have not yet secured a copy of the "Regulations," a brief abstract of their contents follows:

The applicant is to be examined stripped in a large, well-lighted room. First, the general condition of the skin,

cranium, face, neck and chest is to be observed. The minimum height is 5 feet 1 inch; the minimum weight is 118 lbs.; minimum chest expansion 2 inches, except that if the applicant is *active, has firm muscles, and is evidently vigorous and healthy,* a chest expansion of 1 inch and a weight of 110 pounds are acceptable if the height is between 61 and 64 inches, allowance for the various heights being shown in the table.

After these measurements have been taken the applicant is directed to extend the arms above the head and to cough vigorously; and examination is made for hernia by passing the index finger up to the external ring. The genital organs and the anus are next exposed and examined.

Examination of the heart and lungs then follows; the rate of pulse and of respiration is recorded.

The upper extremities are examined to make sure that all joints are free and supple. To test the joints of the lower extremities, the applicant is made to leap directly up, striking the buttocks with the heels, to hop the length of the room on the ball of one foot and then the other. After these and other similar exercises, the heart and lungs are re-examined.

A mental examination should determine whether the man is possessed of normal, sound understanding.

To test the vision each eye is examined separately without glasses, at a distance of 20 feet from the test types, and the acuity of vision is recorded for each eye. The minimum requirements are 20/40 for the poorer eye.

The acuity of hearing is tested in a similar manner. The applicant, who faces directly away from the examiner's assistant, 20 feet distant, is directed to repeat the words spoken by the assistant, the examiner standing by the applicant and closing the ear not being examined by pressing the tragus firmly against the meatus. If words are not heard distinctly at 20 feet, the assistant approaches the applicant foot by foot, using the same voice, until the words are repeated correctly. The hearing with both ears open should not be below 10/20.

As causes for rejection the following defects are among the most important:

The lack of normal understanding. Chronic, contagious and parasitic diseases of the skin when severe or extensive. Spinal curvatures and abscess; lateral curvature exceeding one inch to the side of the spinous processes.

Catarrhal and purulent otitis media, perforation of tympanum, conjunctival affections, strabismus, ptosis, exophthalmus, nystagmus.

Deformities of mouth, nose and throat that interfere with respiration or proper phonation. There must be four serviceable molar teeth, two above and two below, on each side, and so opposed as to serve the purpose of mastication. A good fitting bridge or plate does not disqualify if not more than half the teeth are involved.

Disease of the heart and lungs disqualifies, but the irregular action of the heart due to nervousness or tobacco does not disqualify. Pronounced goitre and great enlargement or ulceration of the cervical glands are causes for rejection.

Hernia in all situations, hemorrhoids of a pronounced type, prolapsus, fistula and fissures. Syphilis when discernible by inspection and physical examination, chronic disease of testes, or bladder and kidneys. Varicocele is not a cause for rejection unless large enough to interfere with locomotion; gonorrhea is not disqualifying.

All defects of the bones and joints of both extremities attended with impairment of motion. Pronounced flat feet, pronounced varicose veins.

The Regulations provide that "any of the physical deficiencies mentioned above must be present in such degree as clearly and unmistakably to disqualify the man for military service before he can be found to be physically deficient and not physically qualified for military service.

"Temporary effects of acute disease or of any injury are not to be regarded as justifying a finding that the person so affected is physically deficient and not physically qualified for military service, but may be regarded as justifying a reasonable delay in completing the physical examination in order that an opportunity for recovery may be afforded."

FIRST AID TO THE INJURED; WITH PARTICULAR REFERENCE TO THE AMERICAN RED CROSS*

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Chairman Red Cross,
Dallas, Tex.

I was requested to incorporate in this paper something in regard to the Red Cross and the work being done by it. I shall just state that a campaign over the State is now being made in the interest of the Red Cross. The division of the American National Red Cross operating in this section has recently reorganized the Dallas Chapter with over 4,000 members, up 'till last Saturday night. I am sure within due time it will exceed the 5,000 mark. Houston, I understand, has organized with over 3,000 and Galveston with over 1,000. A campaign recently made in Denver brought in over 7,000 members to the Red Cross; in Salt Lake City, above 4,000. I just give you these figures so you may know what the Red Cross is doing. The campaign I last mentioned is just under one man. They have these field men all over the United States, and the rapidity with which the Red Cross is coming to its own is wonderful.

In this time of preparedness, when the thoughts of the entire Nation are upon the European situation and the part the United States is to play in the theater of war, the meaning of the words "Red Cross" has been borne home to the mind of the humanitarian, to the minds of tens of thousands of parents who are about to give up their sons as sacrifices to the War God and to the minds of the medical men of the entire world.

In times past little attention has been paid to the work of the Red Cross, which has continued its relief in time of peace under most difficult conditions and without the support which has been its desert.

Today the world knows what the Red Cross held forces of this and other nations have done in the battle fields of Europe; it realizes how many lives have been saved, how many stalwart men and boys have been made whole when apparently hopelessly crippled, how much physical suffering has been relieved and prevented, and how many tens of thousands of dependents of troops with the colors in European countries have been given food and shelter and clothing by the philanthropic peoples of the world through the channels provided by the Red Cross.

Today the medical man realizes that medical preparedness is as essential to the Nation which is to be successful in warfare as is the preparation of arms, munitions, foodstuffs and the training of the men to bear arms. And today the medical man is looking to the Red Cross of this country to provide the machinery, the chanel for best utilizing the skill possessed by himself and his fellows. No longer is the Red Cross looked upon as an organization solely for women. No longer is its work regarded as play for idle hands. The Red Cross stands for all that is best in human nature, for service, for sacrifice.

After the first day's fighting at Solferino in the Crimean War, more than 30,000 wounded and dying French, Italian and Austrian soldiers lay on the battle field, exposed to the elements, without food or water, save that which the stronger ones gathered from the canteens of the dead soldiers strewn near by, and without surgical or medical aid for more than thirty-six hours, some for as long as forty-eight hours.

An obscure physician and surgeon, later on to become famous as a philanthropist, worked single-handed on that battle field for hours, and finally, as the battle raged further on and no assistance came from the men in the armies, he organized the peasants living near by and perfected the first organized volunteer relief corps, which did its utmost to care for those wounded and for the wounded of subsequent battles near at hand. This was the beginning of the International Red Cross, for it was from the result of this work that Florence Nightingale was enabled to draw to her other women willing to do their share of actual work in her wonderful labor of love and sacrifice, and it was as a result of this work that the first conference of

*Read before First Annual Meeting of Texas Railway Surgeons' Association, Dallas, Tex., May 7, 1917.

nations was called at Geneva, Switzerland, in 1863, for the purpose of organizing societies in each European country to conduct relief work among the armies of the world in time of war.

In 1864, another conference of nations was called at Geneva, and the tentative plans of the congress of the preceding year were adopted and the so-called "Treaty of Geneva" ratified by twenty-three nations, mostly European. It was not until 1882 that the United States formally ratified the Treaty of Geneva, although during the Civil War the work of Miss Clara Barton along similar lines, and which work was discussed at Geneva by the representatives of nations present when the treaty was ratified, was carried on under a so-styled governmental Sanitary Commission.

During the years following the ratification of the Geneva Treaty by the United States, the work of the Red Cross in this country developed so rapidly that the organization could not keep step with the demands made upon it, and it did not receive the support it should have received. Its work was hampered by the attitude of the American people who, willing enough to give funds and supplies upon the spur of immediate necessity, would not and did not give money constantly for the support of an efficient organization ready for humanitarian service. Apparently the American people expected the Red Cross to meet any emergency, but could not conceive of the necessity for machinery for meeting such emergencies.

In 1905, after the Red Cross had shown by its activities that it was a necessity for the welfare of this country and other countries, the United States Government officially recognized it by Act of Congress, incorporating the American National Red Cross and providing that it should be the sole voluntary agency for the relief of the sick and wounded of the Army and Navy in time of war and designating it as the sole authorized relief agency in time of peace.

In the eleven years since its incorporation as a quasi-governmental organization, the American Red Cross has assisted in relieving the distress of communities stricken by earthquake, flood, fire, tornado or famine, and has expended upward of $11,000,000 in cash and $6,000,000 worth of supplies, exclusive of the more than $2,500,000 relief funds and supplies handled by it for European relief during the present war, without one penny of the cost of handling this vast amount coming out of funds donated for the specific relief work. The cost in each instance has been paid out of the income of the endowment fund of the Red Cross, built up after years of penury and saving. We all know of the wonderful relief work at Galveston, and you know of the great San Francisco earthquake, the Cherry mine disaster, the Johnstown flood, and all the floods on the Mississippi River that have rendered people homeless and penniless, where this Red Cross organization went in and administered the proper relief.

As to the organization of the Red Cross: Its president is the President of the United States. The Chairman of its Central Committee, the active governing board, is former President William Howard Taft, and the Acting Chairman is Eliot Wadsworth, of whom many present know because of the high position he earned in the commercial and financial world before giving up his work with Stone & Webster to accept an unremunerative position in the time of this Nation's need. The Central Committee is composed of a representative from each of the following departments of the Federal Government: Department of Justice, Navy Department, War Department, Department of State and the Department of the Treasury. All receipts and disbursements of the Red Cross are audited by the War Department, this system extending to every chapter and auxiliary throughout the country. Twelve other members of the central committees are laymen and women to insure the volunteer aspect of the organization's being perpetuated. The governor of the state is chairman of each state committee. In other words, the organization of the Red Cross is very similar to that of our Medical Association, from the county society to the district attorney, to the state society, and on up.

Any resident of the United States may become a member of the Red Cross. Mem-

bership carries with it no obligation, implied, moral nor actual. Whatever service is given by its members is given voluntarily, and specifically so, and then only when the volunteer is capable and qualified.

The Red Cross is charged with the duty of augmenting the medical units of the Army and Navy in time of war. It must serve as a medium of communication between the Army and Navy and the people of the United States. It is charged with the loving duty of relieving want and suffering among the dependent relatives of those who go to the front with the colors, whether that dependency exists at the time the man joins the armed forces of the Nation or whether it is subsequent thereto.

In carrying on this work it must be prepared to furnish base hospitals, ambulance companies, sanitary detachments and the necessary technical and clerical personnel for the actual work devolving upon it.

With marked development in practically all branches of the organization, the past year may be recorded as probably the best in the constructive advancement of the American Red Cross.

This was shown in different ways by reports of officials and field representatives at the twelfth annual meeting of the Red Cross recently held in Washington. The big outstanding features of the year's growth and work, as revealed especially by reports of Mr. Wadsworth, Acting Chairman of the Central Committee; Mr. Bicknell, Director-General of Civilian Relief; and Colonel Kean, Director-General of Military Relief, are these: The Red Cross membership increased between December 1, 1915, and December 1, 1916, from approximately 22,500 to about 300,000.

Twenty-six mobile base hospitals for the Army with selected civilian expert personnel have been organized in various large centres of population, and four more are in process of organization, at a cost met by patriotic citizens of $25,000 each. Three field columns have been formed, and three additional bass hospitals for the Navy have been authorized. Through the efforts of chapters and other organizations, surgical dressings, garments, and other hospital supplies valued at approximately $8,000 for each unit have been made and contributed.

Here are some of the facts regarding the accidents in the United States taken from the Red Cross reports at Washington, D. C. I have copied these facts from the official reports sent in.

If any reasons are needed to convince the public of the necessity for such work as the American Red Cross is endeavoring to carry on through its First Aid Division, it is believed the following statements will be quite convincing:

It has been conservatively estimated that between 90,000 and 100,000 fatal accidents occur annually in the United States, and that five times that number of accidents occur which disable individuals so that they can no longer earn their own living. Computing, very conservatively, the earning capacity of each of this latter group at $500 per annum, an aggregate money loss of $250,000,000 annually is indicated. These figures, of course, take no account of expenses incurred by legal claims and damage suits, of the loss to employers of employees, of charges for surgical care, and finally the suffering and sadness brought into thousands of homes, which can not be measured in terms of dollars and cents.

According to the Interstate Commerce Commission, in 1914, there were 202,964 persons injured in railroad accidents, of whom 10,302 were killed. Of the killed, 265 were passengers, 3,259 employees, and 6,788 were other persons, or "trespassers." In the same period of time, 192,662 persons were injured on railroads, of whom 15,121 were passengers, 165,212 were railroad employees, and the remaining 12,329 were other persons or "trespassers." Trespassing is one of the greatest evils with which railroad companies have to contend.

The United States Bureau of Mines reports for 1914 show that out of a total of 742,644 men employed in the coal mines of the United States, 2,451 were killed, or, to put it more graphically, one man died for every 200,000 short tons of coal produced.

The Bureau of the Census reports (which now comprise a registration area of 65 % of the total population of the

United States) state that in 1913 there were:

1,998 deaths from street car accidents;
2,488 deaths from automobile accidents;
2,381 deaths caused by other vehicles;
978 deaths from lightning and electric shock; and
7,036 deaths by drowning.

Typhoid fever, of which we have heard so much, does not compare with accidents as a cause of death in our country, and while typhoid fever is constantly decreasing accidents are constantly increasing, and if they continue to do so at the present rate will soon exceed the annual death rate from tuberculosis.

Another matter of great importance in this connection is that no business nor other organization can reach its true efficiency if it is constantly being deprived of the services of employees through accidents and if such employees are to be kept away from work an undue length of time through the complications incident to lack of efficient First Aid treatment.

The object of the First Aid Division, therefore, is to assist in remedying existing conditions by changing the attitude of the public toward accidents. The methods for prevention of accidents and their relief fall naturally into three heads:

1. Education of the public;
2. Installation of safety devices; and
3. Instruction in First Aid to the injured and accident prevention.

EDUCATION OF THE PUBLIC

This should begin with the employer and then extend to the employee and the general public. Employers may be appealed to in two ways: first, on their humanitarian or sentimental sides; and second, from a cold-blooded business standpoint. It is easy to demonstrate to employers that prevention of accidents will lessen the number of cripples to be cared for, diminish the death rate among their employees, and that it will minimize the loss from damage suits, with the legal expenses that they entail. The time lost to companies while employees are disabled and the resulting fall in production due to the breaking in and training of new men will be greatly lessened and the efficiency remain constant. This latter makes a strong appeal to their economic sense.

SAFETY APPLIANCES

In many instances safety appliances have proved very valuable in preventing accidents, but even under the best of conditions they do not prevent more than 30 to 50 %. Moreover, distressing as the fact is, they do not prevent the bad results that follow accidents after they have actually occurred.

INSTRUCTION IN FIRST AID TO THE INJURED AND ACCIDENT PREVENTION

Every one should realize the special danger of his or her employment. How can this be taught? By instruction in First Aid to the injured and accident prevention. Instruction in the latter alone has not proved effective. On the other hand, once show a man or woman what the results of accidents are likely to be, and their interest in accident prevention will follow as a natural result.

The experience of the First Aid Division, which has been extensive, has demonstrated that the accident rate among men with a knowledge of First Aid and accident prevention is 75 % less than among their uninstructed comrades. It has been observed that First Aid instruction not only makes the expert and older employees more careful in regard to his own hurts, but more ready to offer kindly advice to his less experienced fellow workman. Good First Aid treatment will shorten the time lost by workmen on the disabled list because hospital records prove that patients who have received such assistance and care are in better condition when they enter those institutions.

In the State of Pennsylvania the disbursements of certain benefit associations have been actually cut in half as a result of good First Aid instruction. Knowledge of what to do in sudden illness or injury is of value to any one. How helpless one is when accidents occur unless one knows what to do.

The Red Cross proposes to teach this First Aid work to all who will take it.

It is not possible for every one to go to the front. It is probable that every one will be called upon to do something,—how much must be done will depend upon

eventualities and upon personal capabilities and opportunities. It is not only possible but imperative that every person should know what the Red Cross is and what each person can do to assist in its work, and that every person get back of the organization, financially and morally, and aid in its work.

Each person present may do that by becoming a member of the local chapter, by spreading the knowledge of the work and its importance, and by giving such minor personal service and such financial support to his local chapter as may be possible. Ten minutes' service each day, or a 1-cent donation each day by every adult in the United States would mean the greatest Red Cross society, the greatest humanitarian organization and the greatest humanizing organization in the history of the world.

Do your share now, today, and keep doing it. The men at the front will not fight today and then rest for a month; they will fight today and tomorrow and the next day and forever, until they are beyond fighting or until the cause of this Nation and its allies has triumphed.

I may state that we have here in Dallas over 4,000 new members of the Red Cross that are going actively into the work. We are trying to get every physician into the organization and we have 75% of all the physicians in Dallas belonging to the Red Cross and registered in the First Aid work. Every class is composed of not less than ten nor more than twenty. We have two instructors to the class. There are four divisions in the teaching of Red Cross work. That of the first type is taken up by the physicians; that of dietetics, hygiene and other things, bandaging and things of that kind, are taken up by the nurses. The nurses really do three-quarters of the work. In First Aid the physician is expected to help with First Aid instruction. We have here what is called a teaching centre, given by Mrs. Belo and other charitable ladies of our City. The place is furnished by them and donated by Mr. Lucas, of the Southland Hotel. The entire dining room has been partitioned off for use as a teaching centre. It opens tomorrow, and I as Chairman of one of the divisions of instruction will give each and every one of you a personal invitation to attend this teaching centre and see what they are doing in First Aid work there at the Red Cross division. These classes are taught elementary First Aid work, and we follow the Red Cross text-books. The book I now show you is the one we follow, the American Red Cross Text-Book on First Aid. This is because of the elementary instruction necessary in the work. The other books are for the nurses and the work is given by the nurses. These charts I have here are the simple charts we all see in our schools. One of these is a chart of the muscular system showing the action of the principal muscles in the body. This other chart shows the circulation of the blood, venous and arterial. This other chart is another picture of the skeleton showing fractures, dislocations, compressed fractures and things of that kind. They also have a manikin to demonstrate different anatomical conditions. We have an employee do bandaging every day for the different nurses. He does the actual bandaging and illustrates the compression of arteries and the use of the tourniquet and things of that kind. This other chart shows, of course, the different bones of the system. This other chart shows the compression of the points in the different arteries as a guide in doing the work. The American Red Cross has adopted training which is of the simplest imaginable nature. The tourniquet is very simple and has no elastic whatever in it. I heard Dr. Blake, of Richmond, a few years ago at the Southern Medical Association state that the tourniquet was hands of the First Aid workers, that the most dangerous instrument in that more amputations resulted on account of the tourniquet than any other one thing and that they had in the European armies dispensed with the old-time tourniquet entirely and had adopted one that was absolutely without any elastic in it at all.

Now a word about the triangular bandage. The whole outfit is put up in a very small package. This triangular bandage comes in this box, a small box like this, and this bandage, you all know, is used for every purpose of First Aid work. It

is illustrated to the novice what he might see. This is the regular triangular bandage used by all the medical divisions of the American Red Cross in First Aid work.

The First Aid outfit consists of two average size safety pins and two pieces of gauze, bandaging gauze with selvedge edges. The printed instruction on this gauze is that the centre must be picked up—it is put up in aseptic oil paper—and that this centre is to be picked up by the paper and placed over the bleeding part and then each end unrolled as you see and carried around to the side. The directions are specific in telling the one who is doing the First Aid work not to touch this centre bandage at all, except with the paper, and that is placed over the injured part and then these ends are brought around and tied around. If there is one wound and bleeding point you can use this one as a dressing and then put this one on the outside. If there are two wounds you have the two bandages.

They are also given instructions in here about not using water, and what antiseptics to use, and things of that kind, in First Aid work.

AUTHORS' ABSTRACTS

Surgery, Gynecology, Obstetrics and Genito-Urinary Diseases

(Continued from page 675

When to Use the Curet in Infected Abortions. John Osborn Polak, Brooklyn, N. Y. The American Journal of Obstetrics and Diseases of Women and Children, Vol. LXXV., whole No. 471, March, 1917, p. 409.

The selection of the method of treatment in any abortion depends upon the following: (1) The period of gestation, (2) the condition of the cervix, (3) the amount of hemorrhage, and (4) the presence or absence of infection.

In clean cases after securing sufficient cervical dilatation complete evacuation of the uterine content by means of the finger, forceps and curet, paying particular attention to the proper involution of the uterus, will leave the woman in an ideal condition to avoid complicating morbidity, provided she was not the subject of a gonorrheal endocervicitis at the time of the miscarriage.

In infected cases the management of the writer's clinic is quite different. He and his associates have shown, by taking routine cultures from the interior of the vagina and uterus, that more than 60 % of abortions, and it matters not whence they come, are primarily infected and, therefore, that curettage is an unsafe procedure. The curet breaks through the protective leukocytic wall and spreads the infection into the blood vessels and lymph channels of the uterus and parametria. Hence, when infection is present, the author follows the expectant plan of treatment until cultures from the inside of the uterus show no organisms present, at which time the cavity of the uterus is curetted.

Should the bleeding during this time be copious, this may be controlled by vaginal tamponade and the free administration of pituitrin until the uterine culture is sterile, when evacuation may be resorted to with perfect safety.

Following the curettage, which is relatively bloodless, if pituitrin has been used, the interior of the uterus is packed with strip gauze which has been soaked in tincture of iodin. This pack is left in the cavity of the uterus for twenty miutes.

Routine curettage the writer considers important for the following reasons: (1) Complete evacuation of the uterus minimizes the blood loss at the succeeding menstrual periods, (2) placental remains favor the development of chorio-epithelioma, and (3) routine curettage and the microscopical examination of the scrapings give valuable information and may occasionally detect one of the most malignant of degenerations, chorio-epithelioma.

Intravenous Injections of Colloidal Solutions of Acacia in Hemorrhage: Preliminary Note. S. H. Hurwitz, San Francisco, Cal. The Journal of the American Medical Association, Vol. LXVIII., No. 9, March 3, 1917, p. 699.

Transfusion of blood is a better form of treatment for acute and prolonged hemorrhage than any other mode of therapy. As a result of such treatment, the blood pressure is usually raised, it is better sustained, and the general improvement which results surpasses that obtained by fluids other than blood. The use of saline is not efficacious because of its non-collodial character. It passes rapidly out of the vascular system, and the rise in blood pressure which follows such infusions is as a rule transitory.

Where it is not imperative to combat the dangerous anemia which may result from hemorrhage, clinicians have sought to find other fluids which in the absence of blood might serve as suitable substitutes. Hogan emphasized the value of intravenous injection of gelatin solutions in this connection. The writer's observations have shown that solutions containing acacia are better for this purpose both because of their non-protein and non-carbohydrate character, and because of the simplicity of preparing and of sterilizing them. In practice, he employs a 5 % acacia-Locke solution made by dissolving the acacia commonly used by pharmacists in Locke's solution and filtering. This gives a fluid whose viscosity approximates that of the blood plasma. Some preliminary clinical and experimental work has convinced him of the value of this solution in combatting lowered blood pressure due to depletion of the circulating fluid.

EYE, EAR, NOSE AND THROAT

AUTHOR'S MUSCLE-SHORTENING OPERATION*

By H. H. Briggs, M.D.,
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HISTORICAL

The first attempt at advancement of an ocular muscle was probably an expediency to meet the emergency created by a reckless tenotomy. As the physiology of the extrinsic muscles and their co-ordination with the intrinsic muscles advance, and the pathology of squint is studied, the operation of advancement remains not only a safeguard against an illy-performed tenotomy, but in many cases is the only indication to correct muscular imbalance. Dieffenbach,[1] in 1842, used a suture to lessen the excessive effect of tenotomy. He mentions also the excision of tissue and cauterization at the insertion of a weakened muscle as a means of shortening the muscle. The first step in the development of advancement operations appears in a case reported by Grerin.[2] Tenotomy of both interni had been followed by divergence. Division of the external recti had failed to correct the deformity. He loosened the tissues from the eyeball on the temporal side, dissected up the remains of the internal rectus, drew it forward, and fastened it to the ball. As a retention suture he passed a waxed thread in the ocular fascia near the external margin of the cornea, brought it forward and attached it to the bridge of the nose over adhesive plaster.

In 1858, Critchett[3] did an advancement operation. Solomon,[4] in 1864, for external divergence, made a flap from near the nasal corneal margin, including the internal rectus. The external rectus was divided. The conjunctiva, anterior to the insertion, was made a second flap, which was turned over the cornea and sutured to the first flap, the central sutures being directly in front of the cornea.

In 1871, Weber[5] used a single suture advancement. De Wecker,[6] in 1873, devised a method which may be considered as the beginning of modern advancement.

PRECISION

No operation requires greater precision than those for readjustment of the ocular muscles. We appreciate this the more if we remember that for each millimeter a muscle is shortened or lengthened 5° of rotation is effected and that 1° of deviation, if uncorrected, means diplopia for small objects. To illustrate: A letter in the 20-200 line of the test card subtends an angle of fifty minutes of an arch, the width of the bar composing the letter subtending an angle of 10 minutes or 5/6 of a degree, so that if you should have an uncorrected deviation of one eye upward, say of one degree, which could not be corrected by the stimulus of fusion you would see two letters, one above the other, with a space between them equal to the width of one of the bars making the letter. Such diplopia would be disturbing, indeed, and an error of advancement of 1/5 mm. in adjusting the eye would produce this diplopia. Fortunately, the physiologic stimulus of fusion comes to our rescue and corrects such small errors.

In certain methods of advancement, especially those involving section of the tendon, it is difficult to estimate within two or three millimeters the exact point of reattachment of the tendon, and this possible error of two or three millimeters means five times this amount, or ten to fifteen degrees of uncorrected phoria or tropia. Is it any wonder, then, that our ultimate effect in advancements may vary ten or fifteen degrees from what was intended? It is some consolation, however, to know that for every five degrees of phoria or tropia which we have failed to correct it has meant a failure of only one millimeter of adjustment. An error of one millimeter in your corneal incision in cataract extraction would probably not

*Read in Section on Eye, Ear, Nose and Throat, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

affect your final result in vision so much. The readjustment, therefore, not only at the time of operation, but after final healing, must be within a millimeter of your calculations in keeping with orthophoria.

VARIOUS METHODS

That more than fifty methods of increasing the power of an ocular muscle may be found in the literature only proves their deficiency. These may be divided into three classes:

First, those in which a new insertion is made nearer the cornea.

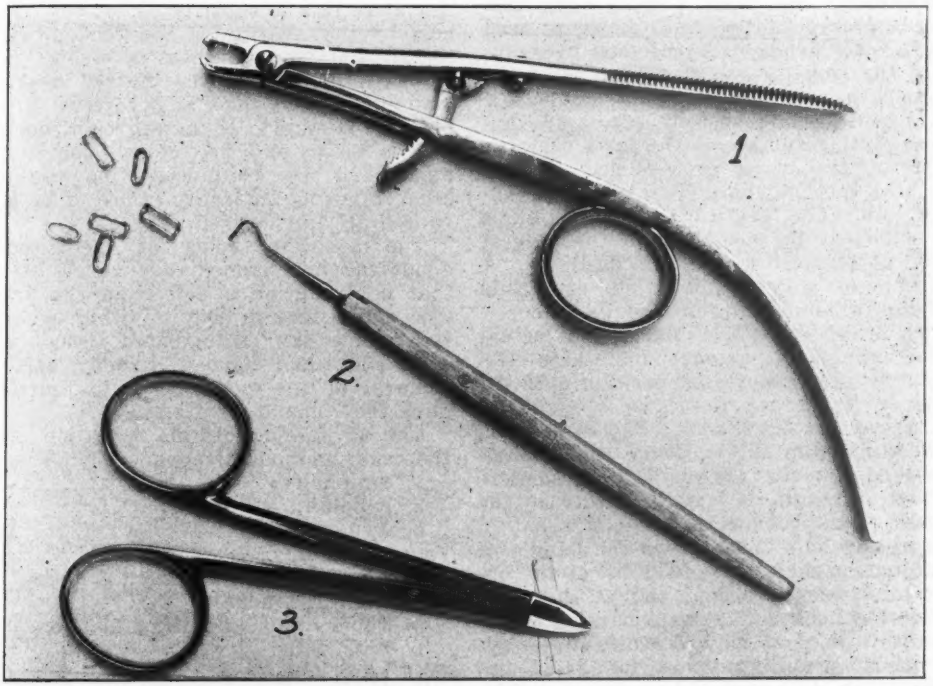
Second, those in which the insertion is not severed, but the muscle shortened by tucking or resection.

Third, those in which the tendon is tucked or folded and the overlapped portion attached anterior to the insertion.

AUTHOR'S METHOD

In 1909, the writer,[7] on account of certain difficulties and uncertain results encountered in the various methods in vogue at that time, was led to seek a new method, and has since that time used the following method exclusively:

The method is applicable to any case in which shortening of an ocular muscle is indicated. The principle involved is the looping of the tendon and maintaining the shortening thus attained by means of a silver link (Fig. 1) clamped over the loop and retained there until inflammatory adhesion takes place between the advanced portion of tendon and the sclera. The link, elliptical in shape, is made of silver wire (No. 22, Brown and Sharpe Standard). It is long enough to extend across the tendon, and wide enough to allow a small tendon hook with the looped tendon and overlying conjunctiva to pass through its lumen. The major axis of the link should be about 5 mm., the minor about 2 mm. Pure silver wire gives the



1. Silver link and clamp forceps for use in tendon-shortening operation.
2. Special tendon hook.
3. Scissors forceps with wedge-shaped blade above and flat blade below. For severing link.

proper amount of resiliency, retains its compressed shape, is easily removed and seems to serve better than an alloy. To insure against the tendon's retracting through the link, burrs may be punched on the inner surface of the link to act as barbs against the pulling action of the tendon.

A clamp forceps (Fig. 1) is used to grasp the silver link in its jaws and hold it in position over the tendon until the loop of tendon and conjunctiva is drawn up through the link, when by compressing the forceps the link is compressed sufficiently firmly over the loop to maintain the loop the required time after the forceps has released the link and left it *in situ*. Passing entirely across the approximating surface of the jaws near the tips are transverse grooves deep enough to hold the long parallel sides of the silver link. The length of jaw to the angle is sufficient to accommodate the longest loop of tendon that may be desired. A millimeter scale is placed on each side of the jaw indicating the length of loop—each representing 2 millimeters of actual shortening. A ratchet maintains the jaws in any compressed position over the link.

A special tendon hook (Fig. 2) is used, differing from the ordinary small tenotomy hook in that its shank, 6 millimeters above its angle, is bent backward in the plane of the hook at an angle of about 15 degrees. This bend allows the handle of the tendon hook to be held out of the operator's line of vision, and at the same time the hook may remain parallel to the tangent plane of the eye at the site of operation. Dr. Jervey has found an increase of this angle advantageous. The hook should be short enough to pass through the major axis of the link, and yet sufficiently long and strong to pull the tendon through the link, overcoming the pull of the opponent muscle, which may or may not have been previously tenotomized.

For removal of the link a scissors forceps with wedge-shaped blade above and flat blade below (Fig. 3) is used to divide each end, when the severed halves of the link may be removed with small tissue forceps.

After the usual preparation of sterilization and anesthetization, the operator, standing on the side of the eye nearest the muscle to be shortened, makes a small opening in the conjunctiva on one side (the operator's right side) of the tendon near its insertion into the sclera, the distance from the insertion varying with the degree of advancement intended. An ordinary tenotomy hook passed beneath the tendon is held by an assistant, the clamp forceps holding the silver link is held over the tendon with one hand, and the special tendon hook passed down through the silver link is substituted for the hook held by the assistant. The tendon with its overlying conjunctiva is drawn up through the link to the desired degree, and the jaws of the clamp forceps forcibly approximated. If the degree of deviation is great, and the tendon loop to be made long, the conjunctiva may be incised, allowing the tendon only to be advanced to any desired degree.

The moderate edema of the tissues about the link immediately covers it so that no irritation is felt from the presence of the foreign body. Within twenty-four hours the strangulated tissues become white and begin to atrophy, and on removal of the loop in ten to fourteen days they should be excised.

The advantages of this operation over the usual methods of advancement are:

1. Simplicity.
2. Elimination of sutures.
3. Avoidance of tenotomy of the advanced muscle.
4. Absolute security from slipping or retraction of tendon.
5. Short duration of time of operation.
6. Less pain.
7. Less amount of plastic inflammation during convalescence.
8. Short period of convalescence.
9. Less scar and deformity.
10. Better results.

"EPISCLERAL TISSUE" UNRELIABLE

Much of the difficulty in the advancement operation is due to the character of the tissues dealt with. The conjunctiva and subconjunctival tissues are extremely elastic and easily dragged away from their normal position or cut through with sutures during the operation or later by softening or sloughing, and therefore offer poor anchorage. Where

sutures of any material are used, one is never certain of the exact degre of shortening at the time of operation and much less in the final result.

They (sutures) militate against the success of an operation:

First, by cutting through tissues, lessening the degree of advancement;

Second, by aiding or inducing infection, which in turn is dangerous and renders the final result uncertain; and,

Third, the placing of sutures in itself is a dangerous procedure.

Howe[8] states: "One of the greatest difficulties in all these operations is that they require the anchorage to be made in what is usually described as the 'episcleral tissue,' but in reality the sutures are seldom or never in the episcleral tissue only. They are either in the conjunctiva, which is elastic and easily torn, or the needle enters the sclerotic itself" which, being but one millimeter thick, is often punctured and the ciliary region invaded. He mentions a colleague who broke a small needle, the point remaining in the ciliary region and being extracted only after a careful and long search.

Woodruff[9] has seen two cases of perforation of the sclera, one of sloughing of the sclerotic and two in which the caruncle was drawn toward the cornea.

Wirts[10] reports a case of phthisis bulbi following an advancement operation.

Cowgill[11] mentions an ulcer of the cornea in which there was no injury of the cornea at operation. The eye was preserved, but a leucoma extending to the center of the cornea resulted. He attributed the ulcer to the reduced nutrition from the severing of the conjunctiva and the pressure of the anchoring sutures.

Dr. David Webster[12] stated that he had seen one eye lost from panophthalmitis, three or more cases of ulcer of the cornea, and in more than one case had seen the operator's needle penetrate the anterior chamber.

H. D. Noyes[13] had seen needle points enter the anterior chamber.

Cogan,[14] in operating upon pigs' eyes, found he had perforated the sclera in half of them.

Zentmayer[15] has seen the needle enter the anterior chamber on two occasions, and he once had a perforation of the sclera and loss of vitreous from sloughing.

Quoting from Claud Worth:[16] "Sutures must have a firm hold in the sclerotic; no other mode of attachment can be depended upon. My sutures traverse two-thirds of the thickness of the sclerotic. This exact depth which I have used for many years without accident is certainly safe, but if a suture were inserted through the whole thickness of the sclerotic it would probably lead to loss of the eye and I have heard of such catastrophe."

Apropos of this statement is the following from Howe:[17] "The layer of scleral tissue near the cornea is only about 1 millimeter thick. The smallest needles measure from 0.6 to 0.8 millimeters. A larger needle either does not penetrate the sclerotic, or if it does so it is at the risk of passing through into the ciliary region." How an operator can pass a needle exactly two-thirds through a membrane 1 millimeter thick is, to say the least, baffling.

Landolt,[18] who said that "the dosage of tenotomy is uncertain and from the dynamic standpoint its effects are unfavorable," might have added that the effect of advancements is also, though to a less degree, uncertain.

Woodruff[19] states that the reason serious accidents do not follow advancement operations oftener is that the operator erring on the side of safety prefers insufficient anchorage to perforating the sclera and leaves us to infer that in operations of true advancement, where attempts are made of anchoring in the so-called episcleral tissue, the eye is endangered on the one hand or an insecure anchorage results on the other.

While the conjunctival sac and the lachrymal secretions have certain bacteriacidal properties, wounds of the eye are prone to infection, and especially is this true when any foreign substance such as silk or catgut remains in the eye. The substance best tolerated in any part of the body, and especially by mucous membrane, is silver, which in the form of a small link is the only substance used in the author's method, and it is so placed

that it does not even penetrate the tissues.

Some operators believe that by advancing a muscle above or below the original attachment a co-existing hyperphoria may, with the lateral deviation, be simultaneously corrected. Personally the writer has never attempted this complex proposition. It may be argued (and the same would apply to all tucking methods) that the author's method, leaving the insertion intact, precludes the possibility of effecting this dual result. While this is true, the operator is more than compensated for this lack by the assurance that by not severing the tendon and keeping the advanced edges in absolute juxtaposition, assured by the shape and length of the silver link, he not only can not correct a deviation in the vertical meridian, in case of hyperphoria, but furthermore, he may not produce a hyperphoria by miscalculations or accidentally misplacing the tendon vertically in cases where no vertical deviation exists, as often happens to the best operators after severing a tendon and attempting to advance it along the horizontal meridian.

The author's method also assures against the accidental production of cyclophoria, a subject so ably treated in Dr. Savage's[20] "Ophthalmic Myology." In an editorial, "Muscle Shortening vs. Muscle Advancement," he warns against the danger in advancement of accidentally turning the eyeball on its anterio-posterior axis so as to throw unbearable strain upon the obliques. For example, if the external rectus be advanced and the tendon fixed too high, there is strain upon the inferior obliques, and if the internal rectus be advanced too high the strain is upon the superior obliques. If the point is fixed too low, then the reverse is true.

Leaving the tendon intact, aside from lessening trauma, insures, therefore, against induced hyperphoria, induced cyclophoria, and in case the sutures cut through, it insures against the severed muscle retracting and producing a much worse squint than was first attempted to correct.

It may be said that the author's method does not allow the operator to watch the effect produced during the operation and modify the tension of the sutures to meet the indication, as is done in the Prince and other methods of the pulley type. Concerning this, Edward Jackson[21] says that "this ought not to be depended upon to the neglect of careful calculation beforehand of the exact effect to be aimed at. Only when some unfortunate factor intervenes and the effect produced proves quite different from that expected, is it wise to modify a carefully proposed plan of operation. Under the stress of operation with local anesthesia the patient's answers as to the subjective tests become especially unreliable."

The only trauma to the eye consists in making the smallest possible incision through the conjunctiva and subconjunctival tissues, barely large enough to admit a tendon hook to be passed underneath the tendon. The only manipulation otherwise is the action of the forceps in aiding the making of this incision and the traction of the hook on the tendon and conjunctiva in bringing them through the link. The entire traumatized area, including the incision, is drawn through the link and ultimately excised. Thus there not only is no suture in the tissues, but the only foreign body present is one of silver, which clamps the tissues together rather than penetrates them. There is less trauma than in any other operation done upon an ocular muscle.

The time required will average about two minutes and the amount of pain and discomfort is practically nil; far less than in any method of tenotomy.

The author's method is free from the objection to the other tucking or folding methods, leaving a bunch of folded tendon and muscle to atrophy and slowly become partially absorbed. This bunch is usually the focus of the persistent inflammation requiring weeks and sometimes months to subdue, and is not only uncomfortable and unsightly during long convalescence, but may remain a permanent disfigurement.

There is so little inconvenience to the patient that he usually, after the first day, prefers to leave the eye unbandaged, which allows the stimulus of fusion to aid in producing binocular single vision. As would be expected from the slight amount of trauma, the period of convalescence is

short, the child returning to the school or the adult to his vocation usually within one week after removal of the link.

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DISCUSSION

Dr. G. C. Savage, Nashville, Tenn.—Twenty-five years ago I discovered the principle of taking up the slack of an ocular muscle just behind its insertion, and, discovering that principle, I immediately did the first operation for shortening an ocular muscle. My operation as done originally has been modified, I think, forty times, but Dr. Briggs says fifty. When the fortieth man had modified it, I wrote him I did not know what the other thirty-nine men would think about it, but I thought he and the other thirty-nine men stood in about the same relationship to the original operation,—i. e., that no improvement had been made.

Let us see what is meant by the slack in the muscle: (illustrating on the blackboard) the muscle that is too weak can be made stronger by shortening the distance between the origin and insertion; and if we shorten the distance between the origin and insertion we are just simply taking up the slack of that muscle, and that was the principle that I discovered twenty-five years ago, so that the discovery of the principle and the operation was old enough to vote for Wilson for both his first and second terms.

Taking up the slack occurred to me when I had a patient on the operating table ready to do an advancement after the old fashion—that is, the old operation, cutting the tendon loose, cutting off a piece of the tendon and bringing the end of the muscle over in front of the original attachment. If our friend Ellett talks on this subject tonight he will tell you that, in any advancement operation, the new attachment is the point of the old insertion.

I am going to speak first of Dr. Briggs' operation. He can do what he says he does. His operation takes up the slack of the muscle just behind the attachment of the tendon of that muscle. Therefore, his operation is a modification of my own old operation. It is capable of bringing the muscle straightforward, but by his operation you can not change the plan of the muscle at all and he does not claim this either in his paper or in conversation. His operation is easy to do. It is a safe operation. I don't think it best at the end of the week or five days or any other time to clip off the muscle tuck, and especially would it be unnecessary if he did not clamp the link all the way from one end to the other. I told him in private conversation tonight that he would avoid the whitening of the tissue included in the ring if he made the compression in the center alone.

Of course dead tissue is better cut off; but I think that modification would be an improvement in his operation. You can not raise the muscle any higher; you can not get it any lower. It must be a straightforward advancement, if you follow the modification of Dr. Briggs. I believe his operation is the simplest, but I am free to state that it is the best of the forty modifications of the original tucking operation.

Now I am going to show you how the original operation was done. I am going to prove to you tomorrow, if the case is presented at the clinic, that it is as easy to do as the Briggs operation and can be done in as short a time and with instruments that you will find in every operating case. The incision is made at the lower part of the muscle, through conjunction and the capsule of Tenon. One large strabismus hook is passed beneath the tendon of the muscle and is drawn forward against the attachment. One of the two needles on the suture is now passed through the tendon, near its upper border, and is brought out through the capsule and conjunctiva. The other needle is used for three punctures. To use this needle the hook underneath the tendon is passed to the assistant and another hook is taken in the hand of the operator and by him pressed beneath the muscle and thus carried backward as far as necessary. With this hook he lifts the muscle away from the sclera to make way for the passing of the second needle. If we want to do a straightforward operation we make a puncture with this needle at a point in the same horizontal line with the first puncture and bring it out through the muscle, capsule and conjunctiva; and with the hook still lifting the belly of the muscle away from the eye this needle is made to pass again through the conjunctiva, capsule and belly of the muscle and is brought out through the cut. The loop between second and third punctures is drawn in contact with the conjunctiva. Removing the second hook, the operator takes the first hook again in his own hand and passes the same needle through the tendon near its lower border immediately beneath the first puncture. Thus the second needle has been used three times. Passing the two needles through the Price suture plate, the knot is tied after having drawn the

loop up to the tendon attachment. The knuckle immediately shows, but nothing need ever be done to it, for it will disappear in due time by absorption atrophy. The suture should be allowed to remain seven days. Because of the suture plate the stitch is easily removed.

Dr. J. W. Jervey, Greenville, S. C.—I am very glad, indeed, Dr. Savage has referred so kindly to Dr. Briggs' operation. I am reminded, in opening this discussion, speaking of Dr. Briggs' paper, of a certain little boy who approached his father with the question, "Papa, what is a bricklayer?" His father looked at him in astonishment and said, "I am surprised at you. A bricklayer? Certainly, you must know that? Any fool knows that." He looked at his father and said, "Yes, father, but I am not a fool."

Now, then, that is a rather harsh and of course an unparliamentary word, and I am not permitted to use it; but I have become convinced in my very small experience with Dr. Briggs' operation that any one who knows and hears of his advancement and its superiority in many ways over the other operations which have been customarily done in this section of the country,—that any fool ought to realize the advantages of the procedure of Dr. Briggs as recommended.

Unfortunately, or fortunately, I mean to say, all of us are not fools, and that was very distinctly demonstrated in the reception of Dr. Briggs' paper on this subject on another occasion. A similar paper to this was read at a meeting of the American Medical Association in the Ophthalmological Section, and an incident occurred which I think is worth relating. Dr. Briggs read a description of his operation; at the same time one or two other men read descriptions of operations—suture operations—which they had devised for advancement. You know how many such suture operations have been presented. One of these men was from the West and another from the North. In the course of the discussion on these papers on this same subject, the man from the West and the man from the North had their views freely aired. None of the magnates of the ophthalmological world, dominating in the Ophthalmological Section of the American Medical Association, North and East, had a word to say about Dr. Briggs' operation, illustrating a fact which doubtless we have all observed. I am ashamed to say that owing to the reception of that paper of Dr. Briggs's in the meeting in a hall filled by men who are supposed to be and are theoretically supreme in the domain in which we operate—owing to that reception I hesitated to use the method and did not use it for a long time because I thought it would be flying in the face of Providence. But a few months ago, having the thing on my mind for a long time, I determined I would break the ice. I did. I had a very simple experience, not enough to be worth while recounting, but sufficient to make me believe that Dr. Briggs has, in the method he has devised, marked an epoch in the surgery of the eye muscles, and I am very well convinced, with the small experience I have had, that this is going to become an accepted and clinical method. I know perfectly well, and you all know, that men of Dr. Savage's experience and skill are perfectly well able to recognize and correct hyperphorias, cyclophorias, and any old kind of phoria and outrank the average man doing eye work. Yet, after all, the common, every-day work that is to be done is now, and probably always will be, by many too unskilled to get the results which Dr. Savage with his experience and skill can get; and while of course I do not mean to say anything disparaging to Dr. Savage's method, I do mean to say Dr. Briggs' method is one which will be of the utmost use in the hands of the average ophthalmologist. But I hope that we shall all realize, when these days come about, and they are going to come about, I believe, that this is one of the great reasons why this Southern Medical Association should exist. It is something from the South. It is a good thing, and men of the South have come to see it, because men of the North and East are going to let many things die of inanition before taking in anything that comes from the South.

Dr. E. C. Ellett, Memphis, Tenn.—Dr. Savage discussed this paper apparently without ever having done the operation, and I am encouraged to say something about it from almost as extensive an experience. I have operated upon one case by this method, and had so much trouble in getting rid of the silver link that I never tried it again. It seems to me that if, in putting the link on the muscle, instead of putting it on at right angles to the long axis of the muscle, you put it on obliquely, you would secure the same tilting effect in the operation as you do by sutures as Dr. Savage illustrated in his diagram on the board. If anybody gets all those terrible results that have been detailed here with advancement operations, he ought to quit doing advancement operations. If instead of trying to make a new scleral anchorage we utilize the original insertion of the muscle into the sclera, we shall have an operation which will not cause a twist of the muscle from the original axis, and one that gets more or less effect according to the amount of muscle excised. Such an operation is the Reese resection. In this operation there is no danger of perforating the sclera.

Dr. Briggs is talking about one thing, namely, an operation for squint or crossed eyes. Dr. Savage is talking about another thing when he begins to figure on 'phorias; he is not talking about squint, because most of those with squint come to us because they have a deformity that they want cured. As a rule the squinting eye is amblyopic. As a result they do not have binocular vision and you can not tell whether they have hyperphoria, cataphoria, or any other 'phorias, but some form of squint. You can not figure on the extent of stretching that the cicatrix is going to undergo, neither can you figure on the extent of contraction that it will undergo. Cases that come to me come on account of the deformity. If I cure the deformity that is all they expect and they are perfectly satisfied. They do not get binocular vision as a rule. They do not get improvement of vision in the amblyopic eye, as a rule, and those are not the

considerations that lead them to seek relief. If a person comes for an operation for squint, it is a good rule to cocainize the eye, seize it with forceps and turn it straight. If they have diplopia do not operate, because if you do you get diplopia following the operation and you will never be able to get rid of it, and it will remain to annoy the patient unless it is of such a high character that the second image is out of the field of vision.

As far as the minute corrections of these muscles' errors go, such as Dr. Savage evidently had in mind, I do not operate for these slight muscular deviations. I have served my turn at it; I never did anybody any good; I never relieved them of any of their symptoms and in common with 99 % of other operators in this country I have given up doing muscle operations of that sort. When I operate I operate for squint, for crossed eyes, trying to relieve the deformity, which is the only thing that the patient complains of.

Dr. Charles Huff Davis, Knoxville, Tenn.—Dr. Savage was talking about getting swollen eyes. This is of no evil portent. I was just wondering what he would do if, after his operation, he had gotten an over-effect. Tucking operations for advancement seem to be the order of the day, their chief advantage being that over—or under—effects may be regulated afterward. Dr. Ellett is quite right in what he says about squint operations wherein each eye has equal vision.

This (Briggs) operation for advancement in squint is one of the most unique I have ever seen. It seems that, at all times, the amount of effect is under control. I did not hear Dr. Briggs say just in which cases he thought this operation indicated.

Dr. Briggs.—I do the operation for any condition requiring advancement.

Dr. Flavel V. Tiffany, Kansas City, Mo.—I think it was Dr. Savage who first introduced that operation of advancement of the muscle. He was one of the first at least. I was very glad to see that come, and I have been doing operations right along ever since and I have had a good many cases brought on and I very rarely now do a simple tenotomy.

I do my operation a little bit differently from Dr. Savage. I used to take one suture and one needle. I used the catgut; I did not have to cut that out. I will cure a cataphoria and hyperphoria, or whatever you call it, by this method; but I do not use any. I do not know anything about that plate. I may try it some time. I am not an artist and I can not draw (going to blackboard and drawing diagram); but imagine that (indicating) to be the eye and that the interior and that the external and that the superior rectus and so on. Now I shall divide the conjunctiva at the insertion of the muscle and let this (indicating) be the external rectus and then I shall divide it here (indicating) and expose the route of the muscle entirely. Then I shall pass the needle there above the ball and through here (indicating), and, as I say, I take one needle and coming out here (indicating) the hook has passed underneath it here (indicating) and then this slips and comes there (indicating). To avoid that I make what is known as the matrix suture, coming over here two or three times before coming out at this point (indicating) and then come out here at the right again (indicating). I always pass the needle through the right of the tendon, so that there is very little danger of going through the sclera. Then I cut the suture off here and this will follow into three sutures, one in the center here, and one at either side. Then I take the three sutures and make the same operation above or below, as the case may be, and I resort to that kind of operation altogether. Sometimes I will have trouble such as that by making a tenotomy of the internal rectus, but I am always very careful not to do this in every case, as it was mostly a little slip. To make a complete tenotomy in that way you assist the advancement and I never had any trouble in getting the desired results.

Dr. George H. Price, Nashville, Tenn.—The simplicity of the application of the silver ring, as detailed in the paper by Dr. Briggs, is one thing that commends it very highly to those who wish to operate only now and then. In addition to that, it is quick and it is effective, evidently, from his experience. I have never seen an operation done by this method and have never tried it. It is a method, however, which in my opinion has its limitations. It has its limitations, perhaps, in producing the amount of effect which you would like to get, and in addition to that it has a serious objection, as indicated in the paper which Dr. Briggs has presented, namely, that of destroying the tissue around which the ring has been placed.

Now, the operation is one I feel sure that can be done with little traumatism, but it requires a considerable length of time, if, according to Dr. Briggs' paper, to get the results you wish you have to leave the ring or suture in position so long. I hardly think it is necessary to leave it that long. Whether it can be employed for extraordinary conditions is a question—that is, those in which there is a marked inturning, very marked, or very marked outturning of the eye. It would be an excellent operation in my opinion in those cases in which you wish to produce cosmetic effect without producing diplopia, those in which you can not produce binocular single vision and in which you dare not do more than approximate the correction. This operation, in my opinion, would be most easily accomplished and perhaps most desirable in results. But where you want to make an advancement considerable in amount, and if at the same time you wish to correct any deviation either upward or downward, I do not think that it will produce the effect that the operation suggested by Dr. Savage can and will produce.

As to the correction of 'phorias I also think that it will apply in those.

I am a little bit surprised at my friend Dr. Ellett to know he has abandoned the correction of 'phorias altogether, because they are more distressing by far than squint and very much more difficult for the patient to contend with and sometimes very easy to cure. I have seen it not once but many times when a squinting eye, especially in one comparatively young, has not only been replaced in approximately a good position with the correction of the defect in focal error, but the amount of vision returned to that eye, sufficient to make it both useful as well as ornamental. The operation, as detailed by Dr. Savage, I have done repeatedly, and, like my friend Dr. Tiffany, I had made an effort to do this very same thing with the single suture. I did that once in operating while Dr. Savage was out of town and when he came back we discussed it and he did the other thing.

I never saw and never had a bit of trouble or discharge from but one suture, and that was an animal suture. I invariably use silk, as animal sutures are very much more likely to give you excessive reactions, by reason of the possibility of infection, than is the sterile iron-dyed suture; and the little suture plate to which Dr. Savage referred. He and I use it in these operations altogether. It facilitates very greatly the removal of the suture when it is necessary to take it out. A suture, if unprotected by something to prevent it's being buried in the tissue, will not infrequently become so obscured that it is more difficult to get the suture out, by far, than it was to put the suture in, and the addition of this little silver disk or plate (which is only about ⅛ of an inch broad and 3/16 or 4/16 of an inch long, perforated at either end, through which the needles are passed, and over which the suture is tied), does more than simply protect the suture from being buried in the conjunctival tissue. In addition to that when it is tied it entirely prevents cutting of the tendon by the suture, and when the other part is pulled up closely, it keeps the parts in such juxtaposition that there is no play and thus prevents cutting out of the tissue in the posterior part of the muscle.

Dr. Briggs (*closing*).—It was my intention to report the cases operated upon since I devised the operation in 1908, but as many of the patients live not only out of the city but out of the State, it was found impossible to obtain reliable and accurate data from those at a distance, and moreover such report would have been too voluminous for a paper of this scope. I have many case reports here with me and if any one is interested I shall be glad to go over them. I hope some time to give a detailed report of the 127 cases. Of these one only was a failure. The day after operation, on removing the dressings, the link could not be found either in the conjunctival sac or in the dressings. What had become of it or how it had been loosened could not be determined. Another link was thereupon placed and with the usual success. It probably had not been sufficiently compressed to prevent slipping. Since that time I have had slight burrs punched on either inner side of the link, which insures against slipping.

Dr. Ellett referred to the difficulty of removing the link with the cutting forceps. This is the most difficult part of the operation,—difficult because the instrument makers are not careful to make the cutting edge sharp and so to shape it that it opposes the under jaw to the extreme tip. The link is easily cut if the cutting forceps are correctly made and kept sharp.

The bunch of tissue representing the redundant tendon and conjunctiva becomes strangulated and occasionally disintegrates, but usually the surrounding conjunctiva overlaps the link and adhering to the strangulated conjunctiva keeps the latter alive. These adhesions may be kept loosened if you wish, or if present at the time the link is to be removed in ten days or two weeks, may be loosened before removing the link. A good way is to grasp the bunch with fixation forceps and then raise one end of the link and sever it. Repeat the process at the other end and remove the severed halves. The bunch of tissue may then be severed and removed.

Dr. Price spoke of destroying the tissue. It is redundant tissue. The muscle is too long, and must be shortened in any method of operation. Is it not better to remove this redundancy when you remove the link after the latter has performed its duty of holding the advanced end of the tendon in the new position until it has become reattached than to leave it as an ugly bunch for nature to remove by absorption?

As Dr. Savage has said, the only reason for leaving the redundant portion of tendon and muscle in any method of operation, is for anchorage. It is quite necessary in Dr. Savage's method or in any tucking operation except in mine in which the redundant tissue is not utilized for anchorage because the silver link itself holds the muscle to its advanced position.

As to the limitation of the operation, you are only limited in the amount which you may shorten the muscle by the length of the jaws of the forceps, which could be made any length. The present model allows a loop eight millimeters long to be drawn through the link which would mean sixteen millimeters of shortening, or theoretically, eighty degrees of correction.

I shall be glad if the photographs which have been passed around be sent forward, as I borrowed them with the understanding that they would be returned to the patients.

If the squint is excessive, necessitating a great amount of tucking, the conjunctiva may be incised and the tendon alone drawn up through the link without sacrificing any conjunctiva. This would only be necessary in case of an excessive amount of squint.

The bunch of tissue held by the link may be excised at the time of removing the link in ten to fourteen days or it may be left a few days after removing the link. It is not absolutely necessary to remove it, but a better cosmetic effect is gained by removing it.

CHANCRE OF THE BULBA CONJUNCTIVA*

By E. W. Carpenter, M.D.,
Greenville, S. C.

Modern statistics are showing a larger percentage of extra-genital chancres than formerly, some reports going as high as 10%. My experience does not approximate a ratio of 1% and I have never seen a primary lesion of the lids or bulba conjunctiva before this one. I believe that recent economic conditions are more favorable for the spread of the contagion of lues and that its presence is on the increase. These factors will account for the greater percentage of extra-genital infections reported in modern literature.

In this report I am interested only in primary lesions of the bulba conjunctiva and find that very few cases are available in the literature. Dr. Charles Nelson Spratt, of Minneapolis, in the report of Ophthalmological Section of the A. M. A. for 1913, reviewed the literature to date and reported twenty-one cases. To these I wish to add eight additional cases, two of which appear to have escaped Dr. Spratt's researches, five of which are recorded after the dates of the cases reported by him and one case occurred in my own practice.

CASE REPORTS

Case I.—On July 11, 1915, Cecil Adair, 7 years old, white male, was referred to me by Dr. J. W. Davis, Clinton, S. C., with the following history: About two months previous to this visit he had an alveolar abscess on body of the right mandible, following which two decayed premolars were extracted. During the period of illness with this abscess, the right eye became inflamed and the globe was dark red in the nasal corner. The child has always had attacks of enlarged glands in the neck, takes cold easily and has frequent attacks of sore throat.

Present illness began the first week in May, 1915, when it was noticed that his right eye was red; the lids did not stick together in the mornings; there was no pain, lacrymation nor photophobia; but mucous discharge was abundant. The third week in June, which was six weeks after the eye became red, a flat dark-red rash appeared all over the arms, chest and thighs; both sides of the body equally affected, sides of the face moderately swollen as if mumps were developing, and glands in both sides of the neck were very prominent.

S. P.—Right preauricular gland as large as a pigeon's egg. All cervical glands (anterior and posterior), occipital, submaxillary and the submentals were very prominent. On further investigation all the superficial regional glands of the body were palpable. Tonsils inflamed and protruding with a deep red zone encircling them, adenoids large and of deep red color. Extensive macular bronze-colored symmetrical rash over the trunk, arms, forearms and thighs. Right eye has abundant mucous excretion, with a bronze-red zone extending from the caruncle two-thirds around the cornea, the conjunctiva being much thickened at the caruncle, which is elevated 2 millimeters. Both fornices contained an hypertrophied ridge of conjunctiva and the inner lid surfaces were greatly thickened but smooth. On manipulation of the folds of the caruncle, the most external of which overlapped the corneal margin an open ulcer was discovered, which was irregular when the folds were turned back; measuring 4 mm. vertically and 5 mm. horizontally; margins well marked, indurated and elevated; the surface was grey and granulating. The cornea was not involved. Fundus normal.

Diagnosis.—Chancre of the conjunctiva with secondary syphilis.

Spirochetes could not be demonstrated in the fluid from the ulcer. Dr. T. R. W. Wilson attributed this failure to the profuse lacrymation during his manipulations which kept the wound surface freely irrigated. Wassermann reaction plus positive.

Three days after the first dose of salvarsan the ulcer had almost entirely healed. In three weeks the patient returned for the second dose of salvarsan. At this time the lymphatic enlargement had greatly subsided and the rash had almost completely disappeared. After this the patient did not return for further treatment, but reports that he is in perfect health. I am not reporting this as a cure, because the patient refused to return for observation.

The above case presented a very unique and puzzling appearance. When first inspected it suggested a case of Parinaud's conjunctivitis, but on closer inspection the mucosa of the cul-de-sacs was quite smooth and the temporal side of the bulba conjunctiva quite clear. It was perfectly apparent after everting the lids that I had not discovered a cause for the extensive preauricular adenitis. The caruncle was quite red, but its epithelium was unbroken and thrown into folds overriding the nasal margin of the cornea. Inspection of the marginal folds with a probe revealed a concealed ulcer which extended from the margin of the cornea for 5 mm. toward the caruncle. This ulcer was clearly the basis of the infection and further clinical examination cleared up the diagnosis.

The source of infection was probably from an uncle who had secondary lues, as he frequented the child's home and occasionally slept in the same bed with it.

Case II.—Male[1] 22 years old. Right eye affected. Tumor extended from the internal angle of the eye to the margins of the iris. Right submaxillary gland swollen, still more glands in cervical region. Discharge not mentioned.

*Read in Section on Eye, Ear, Nose and Throat, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

Source of infection not mentioned. The patient was a sailor of the Italian navy.

Case III.—Boy[2] of 15 years. Right eye chancre at internal canthus. Abundant secretion. Preauricular gland swollen, also the submaxillary glands. Mode of infection not ascertained. The boy was a basket maker and seller and frequently visited a low third-class restaurant. It is thought that he was infected there. Syphilitic treatment brought a cure.

Case IV.—Man[3] of 33 years. Chancre just below the cornea near the bottom of the fornix. Ulcer was 4 mm. x 2 mm. shallow. Right eye affected. The right preauricular gland and the glands in the right submaxillary region were much swollen. Source of infection not certain. The man was a mechanic and men in his shop frequently removed foreign bodies from his eyes This was probably the source of infection. There was considerable discharge; numerous spirochetes found.

Case IV.—Girl[4] of 15 years. Left eye affected. Hard swelling on the upper aspect of the bulb, more marked on the external third, from the conjunctival fornix forward as far as the margins of the upper lid. There was a serous secretion. The preauricular gland on the left side was much swollen and hard. Source of infection could not be ascertained. Bacteriological examination showed numerous spirochetes.

The author says Rollet, a French writer, distinguishes two initial syphilitic lesions of conjunctiva, the erosive form and the ulcerative form.

Case VI.—Female[5] of 22 years. Right eye affected. Location antero-external region of the globe. In the center an oval ulcer with some secretion. Preauricular glands and glands in submaxillary region affected. Her husband had syphilitic ulcers on lips and other parts of his mouth. How his wife was infected could not be ascertained. Syphilitic treatment cured the condition.

Case VII.—Girl[6] of 19 years. Right eye affected. Inflammation around cornea, but cornea and iris not affected. Submaxillary gland slightly swollen. Five days later there was a round ulcer on the upper portion of the bulbar conjunctiva. Discharge not mentioned. Cure by syphilitic treatment. Mode of infection not ascertained, but the bridegroom of the girl, according to her parents, had a suspicious ulcer on his neck. On examining the man the author found him syphilitic.

Case VIII.—Conjunctival Chancre. The author[7] says that so far only thirteen cases of this kind have been reported.

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DISCUSSION

Dr. E. Reid Russell, Asheville, N. C.—It is strange that it should be seen so rarely when lues is such a prevalent disease, and one is so apt to rub the eyes with the fingers, which are not always clean. The ophthalmologist does not often see extra-genital chancre. At the same time it is found in all parts of the body from head to foot. The frequent involvement at the commissure and lid margin is due to the maceration of the epithelium by tears and the resulting ulceration, excoriation and blepharitis offering a nidus for infection. Also the caruncle, pica semilunaris and lid margins are frequently irritated by scratching with the fingers. The lesion is single and may be mistaken for a sarcoma, but a positive Wassermann will clear up the doubt; also marked chemosis, induration, ulceration and enlargement of preauricular lymph nodes are constant, and I might add that there is lachrymation and absence of pain, unless the chancre is near the limbus and the diagnosis is made absolute by the demonstration of spirocheta pallida. The eye should be kept clean by some mild antiseptic solution and a dusting powder of calomel. Salvarsan, of course, is used as soon as the diagnosis is made.

Dr. George H. Price, Nashville, Tenn.—I recall a case that came under my observation, in consultation with several other gentlemen a year or two ago, in a physician who had a characteristic ulceration, as described by the doctor, located just inside the lower lid. He had all the symptoms locally of the disease, though we did not recognize it as such because he gave no history whatever that would point in that direction. It was only after several days of continuous investigation and a resort, I believe, to a blood test that it was established that this was primary infection in the eye.

One single remark made by Dr. Russell is not at all clear to me, and that was this, namely, the dusting of calomel in the eye. That I would strongly advise against in the treating of specific troubles about the eve at all, or in the use of any mercury. In the process of secretion or excretion of the iodin about the eyes which might be given internally, dusting with calomel would cause a considerable amount of discomfort. If you are satisfied that the patient has a specific ulceration of the bulbar conjunctiva and you are giving him iodin in any form, internally, it would be a very serious matter to dust calomel in that patient's eyes. Now, the reason I say that is I know it. I never had any primary infection, secondary infection or any other infection of any kind, that I know of, but I was being

treated for what was presumed to be granulated lids, which I never had. At the same time I was taking a preparation on the prescription of a physician which contained iodid of potash, and as a last parting shot, in order to make me absolutely safe and secure from trouble, he dusted my eyes with calomel. I never saw any more from Sunday until the following Wednesday. You could not have told I had an eye. I had a crease across the upper portion of my face. Some iodid of mercury was formed in the eye by the calomel dusted into it and the iodin I was using internally and fixed me. I learned that lesson before I knew anything about these conditions. Therefore, I simply want to enter a word of caution in regard to that.

Dr. E. Reid Russell, Asheville, N. C.—Potassium iodid is not used in the primary stages at all, so the doctor's remarks would not apply to what I said about calomel.

Dr. T. J. Dimitry, New Orleans, La.—I would like to ask the essayist if he had associated with this lesion another sore — that is a chancre on any other part of the body? The reason for asking this question is that many believe that some of these cases of primary lesion of the eye are true pus infections. When there is a mucous patch of the conjunctiva with an infection it will resemble very much the primary lesion. The doctor states that the primary lesion was found existing at the same time as the secondaries. We have had a few cases of syphilis of the conjunctiva, but only one that I could consider primary. In this one I can remember the spirochetes were found after a scraping had been made, and immediately improved with nitrate of silver applications without constitutional treatment. I would like to ask what treatment was used to obtain a cure? Did he depend upon salvarsan, mercury, or both, or did he use local treatment to the eyes?

Dr. Carpenter (closing).—We recognize the fact that extra-genital lesions reach as high as 10 % in the literature, but in my experience do not even reach 1 %. This is the first primary lesion I have ever seen involving the bulba conjunctiva.

In reply to the doctor's question as to the possibility of this being a secondary lesion, let me say that I should not have reported it as a primary one if the possibility of its being a secondary one had been present. The eye lesion was the first evidence of illness and the history bears out fully the diagnosis.

AUTHORS' ABSTRACTS
Eye, Ear, Nose and Throat

A Justification of the Submucous Resection. R. W. Hooker, Memphis, Tenn. Memphis Medical Monthly, Vol. XXXVIII, No. 2, February 1, 1917, p. 36.

A catarrhal condition of the nose, throat or ear is not a disease, but a symptom, and is indicative of some abnormality already existing in the tissues. It is necessary to look behind the symptom to find its cause, just as one would look behind fever to find its cause.

In about nine cases out of ten the trouble started in each one of these organs. In the nose, in the large majority of instances, will be found a deviated septum, sometimes very crinkled, impinging upon the tubrinates producing certainly hyperplasia, and if allowed to go long enough, hypertrophy, casting off its secretion, filled with broken-down cells. Indeed, most cases of hay fever are primarily caused by either a thickened or deviated septum. If this be the cause, one may reasonably look for relief through its removal.

The deviated or deformed septum demands surgical intervention. The submucous resection is the most scientific method of correction and subjects the patient to very little inconvenience. The boney septum should be thoroughly removed, digging down underneath all spurs to the floor of the nasal chambers.

Dysmenorrhea and Its Nasal Relations. W. Lapat, Savannah, Ga. The Journal of the Medical Association of Georgia, Vol. VI., No. 11, March, 1917, p. 232.

He reviews the work done by Mayer and Brettauer on this subject, showing that they had a good percentage of cures. He shows that the cases giving premenstrual headache as a definite symptom were the ones most benefited by the treatment. This he considers an important point, attributing the headache to a neurosis of the branches of Meckel's ganglion which supply the upper part of the mucous membrane of the septum. In some of these cases special spots of engorgement are seen on the septum in the vicinity of the anterior tip of the middle turbinate. By the application of epinephrin to mucous membrane, these spots stand out against the rest of the blanched membrane. He goes on to say that the direct nerve relation between the nose and sexual organs not being known, it should be easily understood how a neurosis in one part of the body could cause a reflex pain in the uterus, an organ which is actively functionating at each period. Those cases which do not have a premenstrual headache he calls a pure functional dysmenorrhea and attributes their improvement to the suggestive influence of the treatment.

The treatment is that used by Mayer, namely, application of trichloracetic acid to the mucous membrane of the septum opposite the anterior tip of the middle turbinate. Two applications each week for six treatments.

In conclusion he says one should not be deterred from carrying out this treatment just because we are not sure of the exact scientific relations. The fact remains that we get a good percentage of cures.

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EDITORIAL DEPARTMENT

OUR WAR

This is our war with Germany. We should realize fully that we are not fighting for France and England, as some would have us believe—but that we are fighting for our own liberty. It is true that we are allied with other democratic nations in defending civilization against the invasion of the heedless Huns, but it is our fight as much as it is that of France, England or Russia.

Ambassador Gerard, on his return from Berlin, after war had been declared with Germany, told of the open boasts of the Germans that after the conquest of France and England had been accomplished, then they would conquer the United States. It is, therefore, well to keep in mind, when we are making sacrifices for our country, that we are doing so to protect the lives, and the honor, of our loved ones.

As President Wilson pointed out in his wonderful "Flag Day" address, as well as on other occasions, Germany is the aggressor in bringing on war with the United States. Americans have been ruthlessly murdered on the high seas, in American ships flying American flags. The rights of neutrals to carry on commerce with belligerent nations has been guaranteed by all treaties among civilized nations for centuries; yet Germany denies us the right to ship our wheat, corn, cotton and other commodities to England and France in order that she may starve them into submission.

The autocratic government of Germany in considering treaties no more than "scraps of paper," and in its merciless war on the women and children of bleeding Belgium and starving Serbia, to gratify the mad desire of its rulers for world power, placed itself beyond the bounds of civilization.

If the United States would remain a free nation; if we would continue to live as the champion of liberty and independence, we must fight with our allies until Prussian autocracy and German militarism are crushed. Then, and not until then, may we hope for permanent peace, freedom and comfort.

Every red-blooded American should be willing to make any sacrifice to help his country win this war. The medical profession, as in other wars, will be called upon to make the greatest sacrifice; but physicians have shown themselves willing to endure any hardship and to suffer anything to serve mankind. The way in which they have responded to the call from the Medical Corps of the Army and Navy shows that America should be proud of her medical men.

It is true that not enough physicians have volunteered to meet the demand, and the National Council on Medical Defense has advised the conscription of enough doctors to supply the need, but when physicians realize fully that we are engaged in a war to protect our homes and loved ones, and that they have a wonderful opportunity to serve, they will respond to their country's call, in numbers more than are needed.

THE BURNING QUESTION FOR PHYSICIANS TO DECIDE

All physicians should not join the Officers' Reserve Corps of the Army or Navy, because many can serve their country better at home. For instance, college professors should not leave their work without providing for the proper instruction of medical students, although each medical school can spare probably one-half of its faculty. The colleges have responded in ways that make most of us feel proud of our alma maters. A larger proportion of men connected with medical schools have joined the Army or Navy than from the profession at large.

Whole-time health officers, or even those who are in active practice, but who devote a large portion of their time to the duties of health officer, should not give up their work, without the assurance that competent and efficient sanitarians can be secured to fill their places. The United States should not make the mistake of Germany, France and England in sacrificing the health of their civil populations to provide surgeons for their armies. It is most important during the war that every man, woman and child of the Nation shall be protected from disease, because efficiency is needed in every productive occupation to provide our soldiers with food, clothing, munitions, and other necessities of war.

The physician who has a large family dependent upon him for support, and with a number of children to be educated, should hesitate before leaving them unprovided for. The writer knows one physician forty-eight years of age who has a wife and eight children, all of whom are dependent upon him for support, yet who asked for a commission in the Medical Reserves. Physicians of this type should not let their patriotism control their better judgment.

Those who have some physical disability that would prevent their enduring the hardships of war should not join the Army or Navy, because they may become an added burden to the other physicians when their services are most needed for wounded soldiers.

Every physician under fifty-five in any line of work should put the question squarely to himself: Shall I give my services to my country in its hour of great need or can I best serve at home? Each must decide as his conscience dictates.

The eyes of his professional brethren and of patriotic men and women generally are upon the doctors of every city, town and hamlet in the United States. It is not enough to say that you can not leave your practice for fear that some other doctor will get it during your absence. Your patrons and friends may not want you to go, but they will commend your patriotism if you make the sacrifice. They will think less of you if you stay at home when they know that our brave soldiers and sailors have not enough doctors to care for them when sick or wounded, and they see you fail to do your duty.

It is not enough to say that you can not leave your wife and one or two children. Thousands of other physicians have left their homes, their wives and children to do their part in this war that is being waged for the liberty and freedom of women and children.

Some say, "What about the risk? Suppose that I should not come home to my wife and children?" The risk is small. Comparatively few Army and Navy surgeons are killed or die while in service. But suppose one does die for his country. Is there any nobler heritage for your wife and children than to give up life for them and for your country?

Think of the opportunities for service in the Medical Department of the Army

or Navy. Think of the wonderful experience in surgery and in treating the sick among our soldiers and sailors. Think of the work to be done in the field of preventive medicine to protect the men of our country who have the courage and the patriotism to face the cannon's mouth or the points of the enemy's bayonets.

Think you that the good people of this land that is fighting for freedom and civilization will not appreciate your services, or that they will forget you the few months, or the few years at most, that you are far from them?

When the war is over, the heroes of many battles return to their homes, the physician will be among the most honored. His friends, patrons and all the people of his community will be told, over and over again, that he comes back to them richer in experience and better prepared to treat the sick. His patrons will all come back to him and he will attract many new friends who admire and respect the man of courage, the one who has the patriotism to make sacrifices for his country.

The war can not last longer than a short time, but one's conscience is with him all the days of his life. If one can go, even at a sacrifice, and does not, as one man said: "He will always feel that he should have gone when his country called." And when his brother physicians come home and he sees them feted and honored, and he sees them as members of various Army or Navy organizations to which he is not eligible, there will come over him a feeling of loneliness and of emptiness that, to say the least of it, does not enhance self-respect and happiness.

THE JOURNAL does not judge any one, and it urges every physician who serves not to judge those who for reasons best known to themselves can not join the Army or Navy Reserves. There are some good reasons why a doctor can not give up his work and we believe that there are not many "slackers" in the medical profession.

Doctor, this, perhaps the most important question of your life, is before you, and you alone can decide where your duty calls. May God give you the strength and the courage to leave out of it any element of selfishness—that you may decide, and serve where your conscience dictates.

THE SHORTAGE OF DOCTORS AND THE NEED FOR MEDICAL STUDENTS

If the United States places two million men in the field, as now seems certain, 30,000 physicians will be needed to care for them. There are not more than 100,000 well-prepared physicians in active practice in the United States, and with nearly one-third of them engaged in military duty, the civilian population will suffer for want of medical attention.

No one knows, but many of those best informed believe, that the war will last for three or four years. Granting that it will end in a shorter time, it will take a year or two to demobilize the troops and 30,000 doctors will be out of practice for several years.

Every one expects that after the war is over the United States, as one of the largest nations in the league to enforce peace, will have to keep a standing army of a million or more men. This will take permanently from practice 15,000 physicians.

Never before has there been such a demand for well-trained doctors; and even if we had no war, with the greatly reduced number of graduates in medicine each year, and with the increasing number who go into teaching, laboratory, hospital and public health work, the proportion of young physicians who enter practice is relatively small.

That there is now, and will be for years, fewer physicians than the needs of the country demand, is admitted by most men who have considered the question. Therefore the need for well-trained young men to take up the study of medicine was never so urgent.

England and France made the mistake of allowing the faculties of their medical colleges to go to the front and many medical schools were closed; but in a year or two the demand for doctors, both in the Army and among the civilian population, was so urgent that the medical schools were all reopened and the young men of those countries are now being appealed to as patriots to take up the study of medicine.

The efficiency of our medical schools should not be impaired by the zeal of their faculties to send hospital units to France, or by the desire of individual physicians to serve their country as medical officers. On the contrary, every medical college should have more students. Physicians and educators everywhere should be urged to induce the college-trained young men to take up the study of medicine.

The selective draft law exempts theological students from Army service, but does not exempt medical students. The law should either be changed, or, what might be better, as an inducement for young men to study medicine, if a medical student, or one who can prove his previous intention to study medicine, should be drafted, the Secretary of War could detail him for duty at a medical school; and during his course in college he could be paid the thirty dollars a month and be made to feel that he is serving his country as well and as faithfully as if he were on the firing line in France.

THE SURGEON-GENERAL'S OFFICE

The busiest place in Washington, which is today the busiest city in the world, is the office of the Surgeon-General of the United States Army. Doctors of all ages, sizes and conditions, country doctors, city doctors, general practitioners, surgeons, and all the other varieties of specialists, and every other kind of doctor, from the humblest to the greatest, are there; and all of them are in earnest in their desire to serve their country.

The physician from the northeast corner of the Northeast, or from the northwest corner of the Northwest, or from the uttermost ends of the South, and from every other corner of the United States, when he becomes fired with patriotism to the degree that he is willing to become a colonel or a general in the Medical Officers' Reserve Corps—or a less important office if he can not get what he deserves—writes the Surgeon-General a dozen or two personal letters. He receives prompt and courteous replies to all his letters, but he feels that a personal interview with the Surgeon-General would be more satisfactory. He therefore goes to Washington to talk over his family history and his past and present performances with the Surgeon-General.

Surgeon-General Gorgas and his Aide, Colonel Noble, whose patience would make Job feel like a "piker" if he could see these two men in action, listen with "eager and wrapt attention" to the important facts in the life of each one who comes. Most of those who go to the Surgeon-General's office are modest, though, judging from what one hears on the outside, some are forced to admit that they are the leading practitioners or the most skillful surgeons in their respective states and that the sacrifice they are making to serve their country is quite extraordinary.

In a few well-chosen words, which they have framed up on their way to Wash-

ington, and have thought over for four hours in the Surgeon-General's reception room while waiting for the "57 varieties," who reached there first, to finish their appointments, they tell the Surgeon-General, or his Aide, just what they want, and some offer a few timely suggestions about how to run the Medical Corps of the Army.

No "knight of old" was ever more courteous to, or considerate of, his lady-love than Surgeon-General Gorgas and Colonel Noble are to all the doctors who go to see them; and each visitor goes away feeling, and knowing, that his particular case will receive just and careful consideration.

The writer is not an exception to the doctors who go to the Surgeon-General's office. But as he sat in the reception room watching the stream of physicians who had journeyed to Washington, he wondered if there were not some way whereby these two wonderfully efficient men might be spared some of the detail work that they are now handling. He also was thrilled with the manifestations of patriotism on the part of his professional brethren, and he trusts that the facetious paragraphs in this editorial will offend no one.

It occurs to the writer that the chairmen of the State Committees on National Medical Defense could give to the physicians in their states much of the information for which doctors now write the Surgeon-General or go to Washington to take up in person. Questions which the chairmen can not answer, or matters which they are not authorized to handle, could be referred by them to the Surgeon-General's office.

The writer desires it understood that he has heard no word of complaint from Surgeon-General Gorgas, Colonel Noble, nor any other person in the Surgeon-General's office; and this editorial is written without their knowledge or consent. It is written to let the medical profession know of the extraordinary duties that are being faithfully and efficiently carried on in the Surgeon-General's office, with the hope that we have offered a suggestion that would relieve these overworked but uncomplaining officials from some of the things that could be attended to just as well by other officers in the Medical Department of the Army.

FOOD CONSERVATION AND NATIONAL HEALTH

One of the most important public health measures that has ever been undertaken is the food conservation plan of Mr. Herbert Hoover and his associate, Dr. R. L. Wilbur, who have charge of the new Bureau of Food Administration at Washington. It was begun primarily as an economic necessity to provide our armies and those of France and England with food, and also to conserve the food supply so that the civilian populations in our country and France and England can buy the necessities of life at a reasonable price; but the education of the public regarding food values and the teaching of every person to eat less of meats, sweets and wheat products and more of fresh vegetables, will result in a considerable reduction in sickness among adults, as well as in a material reduction in the number of deaths from diseases due to over-eating.

Statistics show that the death rate from diseases of the heart, kidneys and arteries are increasing at an alarming rate, i. e., about 20 % in 30 years. The frequency of, and the death rates from, digestive and nutritional diseases have also increased. It is likewise well known that the general death rate of those over 50 years of age has increased considerably in the last few decades.

Metchnikoff, Bouchard and others have

proved beyond question that the putrefaction of an excess of meats in the intestinal tract is a cause of arterio-sclerosis, which is the most important part of the pathology in the chronic diseases of the heart and kidneys. The writer believes that one-third of the 600,000 deaths that occur in the United States every year from diseases of the heart, kidneys and arteries can be prevented, or postponed, by proper eating.

It has not actually been proved that a diet with an excess of carbohydrates will cause arterio-sclerosis. It is well known, however, that they may ferment in the intestines; and that flatulency, constipation, sometimes diarrhea, headaches, insomnia and other nervous symptoms, are at times seen in the so-called "starchy indigestion." Many clinicians believe that the ingestion of an excess of sweets and starches over a long period of time may result in chronic nephritis and other diseases associated with arterio-sclerosis.

Deek's articles on the "Carbohydrate Diathesis" which appeared ten years ago asserted that a diet with an excess of sugars and starches is a cause of tonsillitis, rheumatism, ulcer of the stomach, pellagra and a number of other diseases. Later, Goldberger announced his belief that an unbalanced diet with an excess of carbohydrates (corn bread, potatoes, syrup, etc.) and a deficiency of proteins is the cause of pellagra.

There is much to learn, and there are many things to prove, about the diseases of nutrition, but enough is known to warrant the belief that a number of diseases and many deaths are caused from disturbances in metabolism.

The campaign of education that has been begun by the Bureau of Food Administration is not only aimed at those who are injuring themselves by overeating, but it is also intended to reach the individuals who are poorly nourished and therefore succumb more readily to all diseases. The great increase in deaths from tuberculosis in Germany since meats and fats have almost disappeared from the German dietary, and the high death rate from measles and other diseases of childhood among improperly fed infants, suggest the large part that diet may play in increasing or decreasing the general death rate.

Remarkable to relate, public health officials, who are doing wonderful work in preventing infectious or communicable diseases, have given but little consideration to diet and nutrition as a factor in causing disease and in increasing the death rate — with the one exception of their relation to pellagra. Now comes a patriotic layman, a great economist, a man whose ability as a statesman and as an executive saved Belgium from starving, with the most comprehensive plan that has ever been devised for decreasing disease and for lowering the death rate in the United States.

The appeal of Mr. Hoover and Dr. Wilbur to eat less of everything except fresh vegetables to help win the war; and his plan to educate every man, woman and child in the United States in the simple principles of diet and nutrition is one of the greatest measures for good that has ever been undertaken. It may win the war for us and our allies; it is an economic necessity; and it is a far-reaching public health measure that has hardly been paralleled in history.

War has its compensations. The cost in men and money in the Spanish-American War amounts to nothing when compared to the millions of lives and the billions in commerce that have been saved by the discovery of Reed that the stegomyia mosquito is the cause of yellow fever, and by the practical application in Cuba and the Canal Zone by Gorgas of all

that was known in the prevention of yellow fever and malaria.

The World War that we are now engaged in, terrible as it has been and will be, seems a part of an infinite plan for the uplift and betterment of mankind. We already see evidence of this in a free Russia and in the democratization of Europe. In our own country one of the greatest compensations of the war will be the education of the people in the principles of diet and nutrition.

When permanent peace among all the nations of the earth has been established—which could never be brought about without the United States' entering the war — we shall become the healthiest, the most efficient and the happiest people that have ever lived; and Herbert Hoover and Dr. R. L. Wilbur will go down in history among our greatest benefactors.

MORE YOUNG PHYSICIANS NEEDED

Dr. Joseph Colt Bloodgood, Chairman of the Committee on Preparedness of the Southern Medical Association, calls attention to the urgent need for more young physicians to join the Army or the Officers' Reserve Corps.

Major Robert E. Noble, of the Surgeon-General's Office, has informed me that there are 3,700 men commissioned and that 7,300 commissions are passing through the Adjutant-General's Office, where there is some apparent delay. If these are accepted there will be 11,000. This number is not sufficient to allow any selection as to age, training and specialty.

Major Noble also informs me that the number of commissions, either accepted or passing through the Adjutant-General's Office, of medical men under 31 is only 750. Between the ages of 31 and 35 only 400. This shows that the larger number of men who are commissioned or who have applied for a commission are over 35 years of age. The most important problem before us is how to properly present the Government's need to the medical men under the age of 35.

Major Noble also informs me that the Surgeon-General would be willing to order on active duty any member of the State Committee who has a commission in the Medical Reserve Corps. It is my opinion that that offer should be accepted and if your Chairman or Secretary has not a commission, it might be wise to select some one who has a commission and make him Secretary of your State organization. This will allow him to draw his pay, devote his entire time and act directly under the orders of the Surgeon-General. I am inclined to think that this will simplify our difficulties and work for efficiency.

Do you not think it would be a good plan for your State Committee to find out exactly how many members of the medical profession in your State, under the age of 35, are commissioned, or waiting for a commission, and the reason why the others have not applied for a commission?

THE SELECTIVE DRAFT FOR PHYSICIANS

Resolutions adopted by the North Carolina State Committee on National Defense, Medical Section, and a comment by Dr. J. W. Long, Chairman, State Committee:

"*Whereas*, The justice, wisdom and effectiveness of the selective draft have been recognized by Congress in raising a strong army from our civilian population; and,

"*Whereas*, The advantages of the selective draft apply with equal force to securing adequate medical service for the Army; therefore, be it

"*Resolved*, That we, the North Carolina State Committee on National Defense, Medical Section, recommend to the General Medical Board of the Council of National Defense that the said Board use its influence with Congress in having the principles of the selective draft adopted for securing an adequate medical service for the Army."

The resolution speaks for itself. The objects we had in mind in adopting this resolution were: (1) an adequate medical service; (2) to relieve physicians of the disagreeable responsibility of deciding where their professional services are most needed under the circumstances. It is embarrassing to certain physicians whom everybody recognizes are most needed at home to be required to make that decision themselves; moreover, such physicians are ready to go to the front if the Government decides that they are needed there.

Under the heading "The Selective Draft Should Be Applied to the Medical Profession," the *Journal of the South Carolina State Medical Association* contained the following editorial, in its June issue, written by Dr. James Heyward Gibbes, of Columbia, one of the Associate Editors:

A few years ago the idea of conscription of our citizens into military service would have been accorded scant approval in this country, the majority of our people holding to the view that the proper minded men would volunteer their services in case of an emergency and that conscription would be necessary only for "slackers." The inadequacy of volunteer systems in the past had left us largely with their lessons unlearned. But the experience of the foreign countries engaged in the present war, especially that of England, demonstrating the hopeless confusion and disruption of civil affairs and the inefficiency of the military service which results from an indiscriminate volunteer system, prepared this country, as nothing else than bitter National experience along the same lines could have done, for a ready reception of the principle of the selective draft. Essentially, this principle relieves the individual of the difficult responsibility of deciding as to whether he is most needed in civil or military life, and places such responsibility where it should properly be, in the hands of the Government which is to be served both at home and abroad.

Our present selective draft bill recognizes this state of affairs, and the Government declares its intention of seeing that needful farmers, mechanics, railroad men, financiers, and artisans of all kinds are left at home, and that the more dispensable men are called upon for active participation in the war. This idea has met with a remarkable degree of approval on the part of the American public.

Emotional sentimentality and romantic concepts have no place in this war. America is not entering upon this struggle with an overweening enthusiasm, but with a grim determination and a sincerity of purpose which is born of a consciousness that they are fighting for the right. This quiet intensity of purpose on the part of our average citizenship receives a pleasing support in the realization that the Government is going to direct their endeavors into the channels of maximum efficiency.

Doubtless through inadvertence in legislation a relatively small but supremely important group of our citizens has been virtually left out of the draft. This group is embodied in the medical profession. It is peculiarly unfortunate that these men should have been denied the mental satisfaction of an effective inclusion in the draft bill. The decision of a physician as to whether his duty lies at home or in the Army or Navy is a momentous one, affecting intimately his own interests, the interests of the armed forces, and the interests of his community. It is a decision that no man should be asked to make for himself, but the Government should frankly assume this responsibility, being guided in its action by carefully organized means of advice.

This matter is of supreme importance throughout the country, but naturally of less moment in large, well-organized medical centers than in smaller communities. In the former, the absence of an individual is readily substituted; while in the latter, one man, or a few men, may be the mainstay of an important hospital or may be the principal guardians of the health of a considerable section.

The following figures substantiate the statement that the selective draft does not in effect apply to the medical profession: It has been recently stated that 30,000 military medical men are needed in the present crisis. In 1914 there were approximately 142,332 physicians in the United States. In 1916 they numbered 145,241, or an increase in two years of 2,909, representing a yearly gain of 1,454. Assuming that this yearly rate of increase in the physicians of this country was maintained during the past ten years, and that in 1907 none of our physicians were graduated at an age greater than twenty-one years, the maximum number of medical men in the United States today who are subject to draft is 14,540. As a matter of fact, the average medical student does not graduate earlier than twenty-three years of age. Consequently, making our estimate from 1910 to 1917, we have 10,078 physicians who can be forced into service. This leaves 19,922 medical men who must volunteer their services under the present conditions to fill the Government's needs.

It has been stated that the Officers' Reserve Corps offers a means of registration of physicians, and that by joining this organization physicians may receive the advantages which are prayed for here. As a matter of fact, this is not the case. The average medical man rightly feels today that registration in the Officers' Reserve Corps is practically synonymous with enlistment.

Such threats as were recently voiced by Dr. Franklin H. Martin before the American Medical Association in New York, to the effect that if young physicians of conscription age did not hasten to join the Officers' Reserve Corps they might find themselves drafted into the ranks and digging trenches in France, is certainly not conducive to confidence in the integrity of his office, and it is to be hoped that irresponsibility is a just criticism of his remarks.

The proper solution of the problem is the passage of a medical draft bill, requiring the registration of all physicians in the United States between the ages of twenty-three and fifty, and the organization of responsible and carefully chosen selective draft boards throughout the country to determine, in keeping with the spirit of legislation already enacted, which men are essential to the maintenance of proper medical conditions at home and which one may be spared for military duty.

CERVANTES AS A HEALTH TEACHER

Dr. James Frederick Rogers, of New Haven, Conn., in an absorbing article in the *Sewanee Review** discusses Cervantes from the standpoint of a health teacher

*Rogers, J. F.: Sewanee Review, XXIV, 3, pp. 282-286.

and finds much that is commendable in that respect. The son of a physician, Cervantes was himself "a great lay-teacher of health."

After having lost several teeth in a combat with some shepherds, Don Quixote is made to exclaim: "Unfortunate that I am! I had rather they had torn off an arm, provided it were not the sword arm; for thou must know, Sancho, that a mouth without teeth is like a mill without a stone, and that a diamond is not so precious as a tooth."

Again the good knight tells his squire to "eat little at dinner and less at supper; for the health of the body is tempered in the laboratory of the stomach."

Sancho, in words becoming a philosopher, remarks: "Blessings light on him who first invented sleep. It covers a man all over, mind and body, like a cloak; it is meat to the hungry, drink to the thirsty, heat to the cold, and cold to the hot; it is the coin that can purchase all things; the balance that makes the shepherd equal with the king, the fool with the wise man. It has only one fault, as I have heard say, which is, that it looks like death; for between the sleeper and the corpse there is little to choose."

Poor Cervantes knew only too well the handicap of a shattered constitution. Hence it is not surprising that he should have taken every opportunity to instruct others in the conservation of their own health.

BOOKS BY MEMBERS OF THE S. M. A.

It is a genuine pleasure to be able to call the reader's attention to the appearance of an unusually practical book by a member of the Southern Medical Association. Dr. Loyd Thompson, of Hot Springs, Ark., in his work on "Syphilis,"* has covered the entire field, describing syphilis in all its phases, since as he so truly says, "the disease does not belong to any one specialty, but is to be thought of as a disease requiring knowledge in all fields of medicine."

Chapter I gives a scholarly discussion of the historical side of syphilis. Others deal with the economical importance, etiology, pathology, clinical history, clinical diagnosis, laboratory diagnosis, prognosis, prophylaxis, treatment and then a regional consideration such as the circulatory tract, the respiratory organs, the gastro-intestinal tract, the liver, gall bladder, spleen, and pancreas, the breast, thyroid, thymus, adrenals, and pituitary body, the genito-urinary organs, the bones, joints, bursae, tendons, and muscles, the nervous system, the eye and ear and congenital syphilis, etc.

The book is rich in cuts, many of which are in colors, and all through the work reflects the keen observation and clinical ability of its author.

*Thompson, Loyd: Syphilis. Philadelphia and New York: Lea & Febiger, 1917. Cloth. $4.25.

CORRESPONDENCE

OIL OF TURPENTINE FOR FIRST DRESSING OF WOUNDS

St. Louis, Mo., May 3, 1917.

Hon. Henry de Varigny, Surgeon,
Sausanne, Switzerland.

Dear Sir:

I trust I may not be deemed presumptious in addressing you, for my only reason in doing so is that I might be able, through you, to save another human life before I go hence. I am 75 years old today. I have read in the current number of the *American Review of Reviews* an abstract from your article in the March number of the *Bibliotheque Universelle* on "Methods of Treating Wounds."

I shall not take up your time by discussing the practice of the Surgeon Menciere or that of Surgeon Andre Chalier, of Lyons, or of the "Carrel dressing," i. e., the treatment of the

wound with neutral hypochlorite solution, or still more recent, the plan of Dr. H. Vincent, who proposed a disinfecting powder composed of ten grams of fresh hypochlorite of lime and ninety grams of crystallized boric acid. With this powder the wound is sprinkled at the front before the wounded man is taken to the rear. This amounts to the Carrel process by powder instead of by instillation.

You will notice in the biographical sketch, "Physicians and Surgeons of America," which I make bold to enclose to you, that in our Civil War, 1861-1865, I was appointed, in May, 1864, an Assistant Surgeon in the Confederate States Army, serving at Winder General Hospital and Libby Prison Officers' Hospital, Richmond, Va., until the occupation of Richmond by the Federal troops, in 1865. While at Winder Hospital I instituted the practice of turpentine dressings as a remedy for and preventive of "hospital gangrene." I shall relate the circumstances which led me to make this discovery as briefly and simply as I can.

It was during the hard fighting around Richmond in the month of July or August, when the weather was extremely hot, when the ward-master, a bright and intelligent fellow, reported to me that one of the men just brought in from the battlefield had wounds which had been fly-blown and were full of maggots. I told the ward-master to bring me turpentine, of which we were more abundantly supplied than any other remedial agent, and I saturated his wounds with spirits of turpentine, which caused the enemy, the maggots, immediately to evacuate. The wound healed quickly. I took the cue, and whenever a wound had a suspicious look I ordered the turpentine dressing. One day in crossing the campus I met the Division Surgeon. He stopped me and asked why I never sent patients to the "gangrene ward." I replied that I did not allow gangrene in my wards and related the above circumstance to him and he ordered the treatment to be used in the entire division with the result that gangrene was practically eliminated. By the above plan we antidated Lister by about four years in the antiseptic treatment of wounds.

The plan is to give to each soldier in the ranks a small package, consisting of one roll (5 yards) of aseptic gauze bandage and a two- or four-drachm vial of oil of turpentine with printed directions for use. (A clean medicine dropper might be included in the package.) To avoid strangury, from 20 to 60 drops should not be exceeded. Avoid touching the sound skin, if possible, and apply only to the wounded surface. Sections of the bandage should be used to stanch the hemorrhage. Clean the surface with *hot water*, if possible, before applying the turpentine.

We claim for this plan:

1. That it is self-administrative, immediately after the reception of the wound before the soldier is sent to the rear, and in no manner will interfere with the subsequent treatment of the surgeon;
2. That it is economical; and
3. That it is efficient.

I beg pardon, my dear sir, for this obtrusion, and can only hope that in some manner it will help humanity.

Very truly and sincerely yours,
JOHN J. MILLER, M.D.

Editor's Note: We quote as follows from a letter to us from Dr. Miller when he sent us the above copy: "I wish to add to what I have written, by way of disarming criticism, that it was not by scientific deduction, altogether, worked out by the latest laboratory methods, that the immortal Jenner gave to the world his priceless system of vaccination."

A PHENOMENON OF HYPERTENSION READING

SOUTHERN MEDICAL JOURNAL,
Birmingham, Ala.

In the June JOURNAL L. B. Newell, A.B., M.D., under the head "A Phenomenon of Hypertension Reading," says: "After one has raised the air pressure beyond the point of complete obliteration of the radial pulse and, in the usual manner, allows the pressure to fall gradually, it is not uncommon, in cases of hypertension, to feel one or more pulsations at the wrist, then a total cessation of the pulse beat while the air pressure continues falling, then one again feels the pulsation."

He further says: "So far as I have been able to search the literature, no mention of this has been recorded" (page 464).

In volume 11, Monographic Medicine, page 799, under the head "Determination of the Maximal (Systolic) Arterial Pressure," this statement occurs: "Sometimes a few beats will go through to the wrist at a much higher pressure than the majority of beats; if so, this fact should be noted."

Respectfully,
J. T. REDDICK.

Paducah, Ky., June 18, 1917.

WAR DEPARTMENT

Office of the Surgeon-General
Washington,

July 14, 1917.

From: The Surgeon-General of the Army.
To: Lt. Col. Henry Page, Med. Corps,
Fort Oglethorpe, Ga.
Subject: Request of applicants for the Medical Reserve Corps to be ordered to training camps.

1. In reply to your memorandum of July 6 I am directed by the Surgeon-General to advise you that applicants for the Medical Reserve Corps desirous of active service, or of being ordered to the training camps for medical officers, should be instructed to accept their commissions* and to request this office that they be ordered to the training camp or to active duty. Favorable action upon these requests will probably be taken.

(Signed) BERT W. CALDWELL,
Major, Medical Reserve Corps.

*Many officers get commissions and do not "accept" them. Such men often wonder why they don't get orders.

BOOK REVIEWS

My Birth

By Armenhoule T. Lamson. 140 pages, and 24 illustrations, several of which are in colors. New York and London: The Macmillan Co., 1916. Cloth, $1.25.

The average biography takes up the story of the life of an individual as near the day of birth as possible, whereas this book is supposed to be the autobiography of a foetus in utero, and leaves off where others usually begin, i. e., at birth. This truly remarkable story narrates the changes met with in the development of the ovum into the child, and does so in language so simple that it is readily intelligible to the layman.

We can willingly forgive the author her split infinitives and other fairly-frequent lapses in pure English because of the fact that she has produced a very readable and useful book which it is reasonable to suppose will greatly clarify many points which now perplex the minds the minds of the prospective mother.

The Surgical Clinics of Chicago

Feb., 1917, Vol. I, No. 1, with 33 illustrations; April, 1917, Vol. I, No. 2, with 99 illustrations; and June, 1917, Vol. I, No. 3, with 70 illustrations. Philadalphia and London: W. B. Saunders Co., Bimonthly at $10.00 per year.

What "The Medical Clinics of Chicago" have been, and the Medical Clinics of North America" in the future will continue to do for internal medicine, "The Surgical Clinics of Chicago" are to surgery. Surgeons are coming to realize that there is a marked tendency to adopt a routine method for doing things, and that as they grow older it becomes progressively harder to resist the inclination. However, by constantly following the work of others and by reading the best surgical literature a great deal can be done along the line of progressive surgery. The "Surgical Clinics of Chicago" are doing a wonderful educational work in presenting to the profession the most advanced ideas and methods of a group of Chicago's greatest surgeons. The holders of the clinics are in the main surgical teachers of rare ability, and consequently present well-worked up cases, fully discussed, making their reading a genuine treat to those engaged in surgery. They are well illustrated by charts, diagrams, drawings and photographs.

Physics and Chemistry for Nurses

By Amy Elizabeth Pope, Graduate of School of Nursing, Presbyterian Hospital, New York City; Special Diploma in Education, Teachers College, Columbia University; Formerly Instructor in School of Nursing, Presbyterian Hospital; Instructor in School of Nursing, St. Luke's Hospital, San Francisco, Cal.; and author of various works on nursing. 444 pages, illustrated. New York and London; G. P. Putnam's Sons, 1916. Cloth, $1.75.

The appearance of a new book in a field where so little has been written is most welcomed. Heretofore, the subjects of physics and chemistry have been presented to nurses in a more or less haphazard fashion owing to the fact that each instructor, usually a busy practicing physician, has been forced to adapt the knowledge which he has gained through his study of medicine, to the requirements of the nurse. It is only reasonable to suppose that many failures should result.

The book under discussion presents the subjects in a simple manner which long experience as a teacher of nurses has proven to be successful. A rather unique feature is that the book includes sections on the very important topics of the chemistry of cooking and cleaning.

The Handicaps for the Handicapped

By Herbert J. Hall, M.D., and Mertice M. C. Buck, authors of the "The Work of Our Hands." 155 pages, freely illustrated with sketches by the authors and photographs. New York: Moffat Yard & Co., 1916. Cloth, $1.25.

Two missions have been fulfilled in presenting to the public this book: first, it demonstrates very convincingly to the skeptical the practicability of teaching useful and self-supporting crafts to those physically handicapped; and secondly, it gives full details of the actual methods of instructing such persons. The writer's years of toil and experiment along those lines peculiarly fit them for the preparation of this little volume, which includes chapters on basket making, chair seating, netting, weaving, book binding, cement working, pattern making, and light blacksmithing. Those desiring to become instructors in this work should experience no great difficulty in learning the elements of these crafts from the book itself provided they be endowed with an average mechanical turn, as the descriptions are full and the cuts very clear.

The need of such an undertaking in connection with all charitable institutions is quite apparent. For instance at the Mass. Gen. Hosp., Boston, pottery making by those partially disabled has proven sufficiently profitable to enable the payment of one dollar a day to the workers. When our partially disabled soldiers begin pouring in from the European battle fronts the urgent need of such vocational re-education will be demonstrated.

Operative Surgery of the Nose, Throat, and Ear, For Laryngologists, Rhinologists, Otologists, and Surgeons

By Hanau W. Loeb, A.M., M.D., Professor of Ear, Nose and Throat Diseases in St. Louis University, in collaboration with: Joseph C. Beck, M.D., George W. Crile, M.D., William H. Haskin, M.D., Robert Levy, M.D., Harris P. Mosher, M.D., George L. Richards, M.D., George E. Shambaugh, M.D., and George B. Wood, M.D. In two volumes, Vol. II Four Hundred and Seventy-six Illustrations. St. Louis, C. V. Mosby Company, 1917. Price $7.00.

The second volume completing Loeb's most valuable contributions to Ear, Nose and Throat literature will meet with a warm and hearty reception.

Volume one, published in 1914, deals with the surgical anatomy of the Nose, Throat and Ear, the external surgery of the throat, the direct examination of the larynx, trachea, bronchi, eosophagus and stomach, the operations made possible through this agency and the plastic surgery of the nose and ear: while volume two is devoted to the more specialized surgery of the nasal cavities, the pharynx and larynx, which has been developed through the activities of many brilliant minds applied to this special field.

As in volume one, the illustrations are practically all original, being drawn expressly for this work and aid greatly in making the text clear and easily comprehended.

As in volume one also, all reference to pathology, etiology and sympmatology have been omitted, the text being directed exclusively to operative surgery, including in addition to methods of operating; the indications and contraindications for operating, after-treatment and end results.

Handbook of Gynecology for Students and Practitioners

By Henry Foster Lewis, A.B., M.D., Professor of Obstetrics and Gynecology, Loyola University School of Medicine; Chief of Obstetric Staff, Cook County Hospital; Late Assistant Professor of Obstetrics and Gynecology, Rush Medical College, Chicago; and Alfred de Roulet, B.Sc., M.S., M.D., Professor of Gynecology, Loyola University School of Medicine; Attending Gynecologist, House of the Good Shepherd, and St. Bernard's Hospital; Obstetrician and Chief of Staff, St. Margaret's Home and Hospital. 452 pages with 127 illustrations. St. Louis: C. V. Mosby Co., 1917.

An outline of gynecology for students and practitioners, not dealing with elaborate descriptions of major operations, but giving the essentials of the subject for those who are not specialists. It represents twenty years of teaching experience of its authors. The cuts are numerous and clear.

The Roentgen Diagnosis of Diseases of the Alimentary Canal

By Russell D. Carman, M.D., Head of Section on Roentgenology, Division of Medicine, Mayo Clinic and Albert Miller, M.D., First Assistant in Roentgenology at Mayo Clinic. Octavo of 558 pages with 504 original illustrations. Philadelphia and London: W. B. Saunders Company, 1917, cloth, $6.00 net. Half Morocco $7.50 net.

(Continued on page 28)

SURGICAL IODINE

should be iodine—not a mixture of iodine and KI, like the U. S. P. Tincture, for instance.

Of course we make the official tincture, also two others—Churchill's and the N. F. decolorized. But they are not suitable for surgical use, for when solutions of them are "flooded over" an open wound the KI is deposited as a "crust" on the surface of the wound, where it irritates and also reduces the antiseptic activity of the iodine.

A properly made "Surgical Iodine" has no KI or other alkalies in it; and such an iodine product gives you the full amount of iodine antisepsis approved by the leading surgeons of America and Europe.

That exactly describes our "Surgodine;" would you like us to send you a sample from Baltimore?

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During the past few years Roentgen methods in the diagnosis of gastro-intestinal disease have, very justly, received a great deal of prominence. Medical journals have been replete with articles on this subject but there have been very few authentic books written. The author in this monograph has correlated the procedures and findings which have proven useful in his large experience and has furnished a large number of beautiful illustrations from his own plates. The work touches on the technique of the examination but the matter of diagnosis receives the closest attention. This is a very timely contribution to the literature on Roentgen diagnosis and should prove of great value to those interested in gastro-enterology.

Experimental Pharmacology

By Dennis E. Jackson, Ph.D., M.D., Associate Professor of Pharmacology, Washington, Medical School, St. Louis. With three hundred ninety original illustrations including twenty-four full-page color plates. C. V. Mosby Company, St. Louis, 1917. Price.

A more complete manual of animal experimentation has not come to the attention of the reviewer. The subject matter of this work is arranged with the intention of giving sufficient detail to enable the student to carry out more intelligently the various experiments used in determining drug action. The large number of illustrations and the careful detail commend the book to the worker in this line.

Focal Infection. The Lane Medical Lectures. By Frank Billings, Sc.D., M.D. 166 pages, profusely illustrated. New York and London: D. Appleton & Co., 1916. Cloth, $1.25.

This little book is made up of The Lane Medical Lectures delivered by Prof. Billings at Stanford Medical School, in 1915. It gives an account of the experimental work of the author and a large group of his assistants, as well as an exhaustive review of the literature, and a valuable bibliography. The monograph represents a great deal of original work which is well illustrated by photomicrographs of tissue and smears. At the same time the clinical significance is not neglected.

SOUTHERN MEDICAL NEWS

ALABAMA

At Gadsden, there were recently reported a number of cases of typhoid fever. Energetic steps are being taken to prevent a threatened epidemic.

At Tuscaloosa, Dr. H. R. Morris, of Birmingham, has been given the position of full-time Assistant City and County Health Officer.

At Birmingham, on July 4, there was held a meeting for medical preparedness, presided over by Major J. N. Baker, ex-President of the State Medical Association. Col. Henry Page, M.C., U.S.A., addressed the assembly, and about seven physicians entered the service at the close of the meeting.

At Birmingham, Dr. F. E. Harrington, City and County Health Officer, is enforcing the screening ordinance and is planning the distribution of pamphlets looking toward the prevention of pellagra.

At Bessemer, Dr. F. E. Harrington, Health Officer of Jefferson County, has established a branch health office.

At Tuscaloosa, the following physicians have been accepted in the Medical Officers' Reserve Corps: Drs. J. H. Somerville, D. W. Ward, E. C. Hagler, H. B. Searcy, Maxwell Moody and Alston Fitts. Drs. LeBaron and Collins, formerly at the Brice Hospital, are already in France.

Dr. J. M. Howell, claiming Alabama as his home, has been indicted by the Criminal Court of Shelby County, Memphis, Tenn., for obtaining money under false pretenses. His present address is unknown.

Deaths

Dr. H. R. Johnson, New Hope, aged 55, died in Huntsville on July 6.

Dr. G. T. McWhorter, aged 68, died at his home in Riverton on June 29.

Dr. G. A. Matthews, aged 67, died at his home in Anniston on May 12.

Dr. O. G. Bruner, aged 65, died at his home in Fort Deposit on May 31.

Dr. T. B. Barnes, aged 61, died at his home in Spruce Pine on May 28.

ARKANSAS

At Berryville, July 10, was held the meeting of the North Arkansas Association of Railway Surgeons.

The Medical Department of the University of Arkansas has raised the entrance requirements. Beginning January 1, two years of college work, including physics, chemistry and biology, will be required.

The State Medical Board in May denied the application of Dr. J. M. Howell, claiming Alabama as his home, owing to charges against him. He is wanted in Memphis, Tenn., for obtaining money under false pretenses; he is also wanted in several Arkansas towns. His present address is unknown.

Deaths

Dr. Keating Bauduy, aged 71, Little Rock, died at his home in that City on July 1.

Dr. J. T. Hayden, aged 64, Crawfordsville, died at his home in that place on July 2.

DISTRICT OF COLUMBIA

At Washington, officers of the Medical Section of the Council of National Defense, discussed at a recent meeting the advisability of a selective draft of physicians.

At Washington, recently, there were reported 160 cases of measles in one week, making a total of 539 cases.

Deaths

Dr. P. H. Steltz, aged 48, a prominent railway surgeon, died at his home in Washington on June 5.

Captain Walter A. McClurg, aged 65, Medical Director, U.S.N. (retired), died at his home in Washington on June 16.

Captain Paul Fitzsimmons, aged 78, Medical Director, U.S.N. (retired), died in Washington on June 11.

(Continued on page 30)

Hard Dry Feces

are not only difficult to pass, but may give rise to (1) irritation and congestion of the rectum, which may influence fissures and hemorrhoids (2) by their physical pressure, they may affect prostatic and other genito-urinary conditions. These are in addition to (3) the effects of any autotoxemia that may arise.

HARD DRY FECES are often caused by over-extraction of fluid by the colon, or by lack of intestinal mucus, or both, but they are overcome by **INTEROL,** which not only lubricates them, but, being itself non-absorbable, it stays with them, and *keeps* them soft and mouldable so that they pass easily through constrictions.

With **INTEROL** well mixed in them, more **HARD DRY FECES** cannot form, but instead, **SOFT PLASTIC FECES,** so that the patient obtains evacuation without straining at stool, and life becomes worth living—so far, at least, as **INTEROL'S** combatting of obstipation-stasis-autotoxemia is concerned.

INTEROL* is more than "ordinary mineral oil": (1) it possesses *effective lubricating body* so that it clings to the fecal mass—**INTEROL** has efficient "spread and mix" properties (2) no "lighter" hydrocarbons to disturb the kidneys (3) no sulphur compounds to disturb digestion (4) no odor or flavor, so that the patient *can* take it and derive its benefit.

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are usually relieved more or less promptly as you remove their cause. In the meantime—

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(Continued from page 28)

FLORIDA

At Jacksonville, the district health officers of the State met on June 29.

Dr. W. H. Cox, Brooksville, new State Health Officer, is planning an intensive campaign looking toward decreasing the incidence of typhoid fever and other infectious diseases.

At Jacksonville, Dr. W. W. McDonell was recently named City Health Officer and Dr. C. C. Collins was appointed City Physician to succeed Dr. T. G. Croft, who resigned recently to enter the Army service.

Deaths

Dr. William T. Harring, aged 57, formerly a practitioner of LaGrange, but recently of Florida, died in LaGrange on May 29.

Dr. Thomas H. Chambers, aged 85, Georgiana, died at Daytonia in a local hospital on June 22.

GEORGIA

At Ailey, on June 11, was held a convention of the Twelfth Congressional District Medical Association.

At Americus, on June 21, was held the twenty-first semi-annual meeting of the Third District Medical Association.

Dr. H. F. Harris, who recently resigned his position as Secretary of the State Board of Health, will be succeeded by Dr. J. T. Abercrombie, of Brunswick.

Captain George T. Horn, M.O.R.C., U.S.A., of Augusta, is on duty at Fort Oglethorpe.

Lieutenant Mark E. Perkins, formerly of Millin, is in the active service with the U. S. Army in the Medical Corps.

Dr. C. G. Hooten and Miss Clara Miller, Bronwood, were married recently.

Deaths

Dr. W. N. Fleetwood, aged 82, died at his home in Cochran on May 4.

Dr. Thomas A. Wood, aged 69, died at his home in Dexter on May 22.

Dr. Gilbert Tennent, agad 52, died at Atlanta on May 25.

Dr. Quitman Holton, aged 45, died at his home in Douglas on June 30.

Dr. William King, aged 86, of Athens and Atlanta, died at the home of his sister in Augusta on July 10.

Dr. Robert Stallings, Atlanta, aged 40, former State Chemist, died in Hot Springs on July 12.

Dr. F. M. Ridley, aged 61, died at his home in LaGrange on July 13.

KENTUCKY

At Louisville, the United States Public Health Service and the County Health force are cooperating in making the City more safe for the soldiers who are to be mobilized there.

At a meeting of the Kentucky Valley Medical Association on July 6 the following officers were elected: Dr. T. H. Holloway, Hazard, President; Dr. G. F. Doyle, Winchester, Vice-President; and Dr. Luther Bach, Secretary-Treasurer. The next meeting will be held at Torrent.

At Paducah, as a result of the campaign to induce physicians to enlist in the Medical Reserve Corps, 43 applied for examination.

At Louisville, during a recent meeting of the Kentucky Council of National Defense, the organization went on record as favoring a draft of physicians under 55 years of age.

Dr. Henry Cave, Paducah, is in France with the Roosevelt Hospital Unit.

Dr. W. H. Mason, Murray, was married to Ora H. Kress, M.D., on June 19.

Deaths

Dr. L. G. Armendt, aged 65, died at his home in Owensboro on July 8.

Dr. H. V. Lucas, aged 66, died at his home in Louisville on July 14.

Dr. Burdette Ramsey, aged 93, died at his home in Paint Lick on July 13.

Dr. M. A. McDonald, aged 61, died at his home in Whitesville on May 18.

Dr. W. B. Hunn, aged 46, accidentally killed himself on May 19 when his revolver was discharged as it fell from his pocket.

Dr. J. A. H. Miller, aged 57, died in Louisville on June 7. He was a practitioner of Princeton and District Surgeon for the Illinois Central.

Dr. V. E. Tygret, aged 59, died at his home in Bowling Green on June 1.

LOUISIANA

At Lake Charles, the Board of Health, during a recent meeting, adopted an ordinance providing for a scavenger service for the City to cover that part beyond the sewerage district. There was also a weed-cutting ordinance drafted at this meeting.

Dr. Lester J. Williams, Melville, left on July 15 for service on the Medical Reserve Corps of the Army.

Deaths

Dr. F. G. Marrere ,aged 62, died in New Orleans on July 13.

Dr. Joseph Stein died at his home in New Orleans on May 28.

Dr. Laura Reville, aged 78, died at her home in Plackuemines on June 6.

Dr. M. V. Richard, aged 56, died at his home at Pearl River on May 28.

MARYLAND

At Baltimore, in August, the next meeting of the Baltimore and Ohio Association of Railway Surgeons will be called to order with the following officers: President, Dr. W. F. Morrison, Philadelphia; Vice President, Dr. E. B. Fittre, Salem; and Secretary, Dr. Charles Johnston, of Baltimore.

At Oakland, the quarterly meeting of the Allegany-Garrett County Medical Society was held on July 11.

At the University of Maryland, Baltimore,

(Continued on page 32)

TEMPERED GOLD Hypodermic Needles

possess the rigidity of steel without its brittleness or tendency to break.

A Distinct Advance in Hypodermic Asepsis

Rust-proof, germ-proof, acid-proof. Can not corrode under any conditions, climatic or otherwise. Durability practically unlimited. Sterilizable by all usual methods without injury.
One needle used for over 7,000 mercurial injections is still in perfect condition. An obvious economy.

If not obtainable of your dealer, we will send you a sample needle for $1.00, or a half dozen assorted sizes, up to one inch, for $4.50, post-paid.

Precious Metals Tempering Co.
WHITESTONE, L. I., N. Y.

Hay Fever

SUCCESSFULLY TREATED WITH

Bacterial Vaccines

Pollen irritation and breathing of the hot dust laden atmosphere favors the development of pyogenic bacteria in the respiratory tract which then becomes a primary factor of the disease.

Experience shows that the immunizing influence of an appropriate bacterin will either cure the disease or so modify it that it causes but little distress. Use Sherman's No. 40.

Write for Literature.

MANUFACTURER OF BACTERIAL VACCINES

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Detroit, Mich. U.S.A.

Bran Food
As You Want It

Here is a dish which for 20 years has been a favorite morning dainty.

It is soft wheat rolled—a dish which meets a universal taste.

Into those flakes we now roll 25 per cent of bran. The bran is in flake form to make it doubly efficient.

Certainly no other bran food is today so widely advised by physicians. And a food could not be better fitted to foster the bran habit.

Pettijohn's

Rolled Wheat—25% Bran

A breakfast dainty whose flavory flakes hide 25 per cent unground bran.

Pettijohn's Flour—75 per cent fine patent flour with 25 per cent bran flakes. Use like Graham flour in any recipe.

Both sold in packages only.

(1649)

(Continued from page 30)

there is being formed a base hospital unit under the leadership of Dean J. M. H. Rowland. Drs. Frank Martin and A. C. Harrison have been commissioned majors, A. M. Shipley and C. B. Gamble captains, and G. Perry Ross first lieutenant.

At Baltimore, the health and municipal authorities are co-operating in an endeavor to enforce the sanitary laws of the City.

At Baltimore, Passed Assistant Surgeon H. E. Hasseltine, U.S.P.H.S., has been employed in inspecting the water supplied to passengers on common carriers engaged in interstate traffic.

Dr. Joseph S. Ames, Johns Hopkins University, has returned to Baltimore from the European battle fronts, where he was sent by the United States Government as chairman of a commission to observe the methods used in the foreign war hospitals.

Deaths

Dr. Richard S. Hill, aged 53, Upper Marlboro, died in Washington on June 12.

Dr. J. F. Tearney, aged 62, died at his home in Baltimore on June 25.

MISSISSIPPI

At Hattiesburg, notice was received recently that the United States Government will conduct a thorough investigation of the sanitation of the City and Camp Shelby.

Dr. W. R. Bethea, recently resigned from the office of County Health Officer of Forrest, will be succeeded by Dr. H. T. Mounger, Hattiesburg. Dr. Bethea resigned to enter the Medical Officers' Reserve Corps.

At Jackson, during the recent State Board examinations, there were fifteen physicians issued licenses to practice medicine in the State.

Deaths

Dr. E. B. Sloss, aged 40, died at his home in Oxford on June 6.

MISSOURI

At Moberly, Dr. G. O. Cuppaidge has been elected President of the State Board of Health to succeed Dr. F. H. Matthews, resigned.

At the recent meeting of the State Medical Association, the following officers were elected for the ensuing year: President, Robert E. Scheuter, St. Louis; Vice Presidents, J. K. Henderson, H. A. Lowe, F. B. Long, W. A. Clark and A. B. Cotton; Secretary-Editor, E. J. Goodwin, St. Louis; and Treasurer, G. D. Allee.

At Kansas City, during the recent meeting of the Medical Women's Club, the following officers were elected: President, Dr. Dora Bowman; Vice Presidents, Dr. Alberta Moffett Green and Dr. Luella Brommel; Secretary, Dr. Adeline Soule; and Treasurer, Dr. Avis Smith.

At Kansas City, the health authorities are taking drastic measures to force the property owners of the City to cut all weeds.

At Nevada, Dr. J. L. Eaton has been appointed Superintendent of State Hospital No. 4.

Dr. W. J. Bell, St. Joseph, has returned from the battle front in France.

Dr. Ozias Paquin, St. Louis, was recently sentenced to two years in the penitentiary for violations of the Federal anti-narcotic law. He has appealed.

Dr. George Dock, St. Louis, serving in the American Field Ambulance, has been awarded the French war cross.

Dr. M. F. Engman and Dr. H. E. Kleinschmidt, of St. Louis, were elected President and Secretary-Treasurer, respectively, of the American Association for the Control of Syphilis at its organization meeting in Cincinnati recently. Among those promnently mentioned as lending their support to this new organization are: Dr. Isadore Dyer, New Orleans, La.; Dr. Marcus Haase, Memphis, Tenn.; Dr. H. H. Hazen, Washington, D. C.; Dr. W. H. Mook, St. Louis, Mo.; Dr. G. H. Walker, Baltimore, Md.; Major M. Reasoner, Washington, D. C.

Deaths

Dr. Rollin H. Barnes, St. Louis, aged 63, died at the Polyclinic Hospital in New York on June 3. He was attending the A. M. A. meeting.

Dr. A. J. McLaughlin, aged 63, died at his home in Aldrich on May 17.

Dr. Walter L. Pursselley, aged 50, died at his home in Springfield on June 21.

Dr. A. R. Ayres, aged 75, died at his home in Hannibal on May 29.

Dr. J. W. Hakins died at his home in Glasgow on July 13.

Dr. E. M. Manning, aged 78, died at his home in St. Joseph on June 26.

Dr. J. D. Vaughan, aged 25, Rome, Ga., an interne in the Ensworth Hospital, St. Louis, died on June 24.

NORTH CAROLINA

The Medical Section of the North Carolina State Committee on National Defense has gone on record as favoring conscription of physicians for the Army.

Deaths

Dr. George C. Brooks, aged 57, died at his home in Sanbury on June 11.

Dr. Richard H. Lewis, aged 85, died at his home in Kinston on May 15.

Dr. Thomas J. Hoskins, aged 53, died at his home in Edenton in May.

OKLAHOMA

At Muskogee, according to a recent decision of the City Board of Education, medical inspection of the schools of the City will be conducted at regular intervals.

A movement has been set on foot to procure a unified health system for Okmulgee County. Interest in this work has been stimulated by the efforts of the United States Public Health Service.

At Oklahoma City, an ordinance was passed recently requiring soft drinks to be dispensed in individual, one-service drinking cups.

(Continued on page 34)

Too Big a Problem for the Individual

The problem of demonstrating the harmlessness of substances used in foods is too big for the individual doctor. It is so big that the United States Government itself found it necessary to undertake the work. The President of the United States himself selected the men, after consulting with the greatest universities in our country. His aim, in which he was most successful, was to select

Men You Can Trust

These are the ones he selected:

PROF. IRA REMSEN, Johns Hopkins University, Chairman
DR. JOHN H. LONG, Northwestern University
PROF. THEOBALD SMITH, Harvard University
DR. ALONZO E. TAYLOR, University of Pennsylvania
DR. RUSSELL H. CHITTENDEN, Sheffield Scientific School of Yale University

After two years of study and research, they concluded that "Alum, as such, is not left in the food" and that "alum baking powders are no more injurious than other baking powders."—U. S. Bulletin of Agriculture No. 103.

As a result of this work by men you can trust, you may, with confidence, adopt for use in your homes and sanitariums, baking powders of the double acting type which contain phosphate and alum.

CALUMET is a Phosphate Powder in which enough of the acid phosphate has been replaced by Sodium Alum (not the drug store alum) to insure its keeping qualities and give the desired speed of action. It is chemically correct.

Pure in the can and pure in the baking

Calumet Baking Powder Co., Chicago, Ill.

(Continued from page 32)

Oklahoma doctors are planning to render quite substantial aid to those members who are answering the call to the colors. The Rogers County Medical Society has passed a resolution providing for the sending of $50 a month to the wife of every member of the Society in the service. At Oklahoma City, the Medical Society is planning to give $100 a month to first lieutenants, $75 for captains and $50 for majors. The eye, ear, nose and throat men of the City have offered $200 a month to the first three members volunteering from their number.

At Oklahoma City, the State Board of Medical Examiners has withdrawn the license of Dr. Thomas E. Shepard, of Tulsa. Malpractice is charged.

Deaths

Dr. L. E. Bennett, aged 59, Muskogee, died in Texas on May 28.

Dr. G. E. Miller, aged 39, died at his home in Whiteoak on June 13.

Dr. G. W. Sutton, aged 73, Cleveland, died in Bartlesville Hospital on May 23.

SOUTH CAROLINA

During the recent State Board examinations, there were 27 physicians licensed to practice medicine in the State.

Steps are being taken to have a resolution passed before the State Society whereby those physicians attending the patients of a doctor who is in the active service of the country shall remit to that doctor one-third of the fee collected. A form letter to this effect has been drafted, one copy of which is to be sent to the patient and one filed with the Secretary of the State Society. The letter is to be presented by the patient upon applying for treatment.

TENNESSEE

An indictment has been returned in the Criminal Court of Shelby County, Memphis, against one Dr. J. M. Howell, of Alabama, for obtaining money under false pretenses. His present address is unknown.

At Nashville, the City Hospital has lost three of its visiting staff by resignation. They are Drs. M. M. Cullom, Jere Caldwell and John Stevens. Dr. W. M. McCabe, Superintendent and Chief Surgeon of the Hospital, also resigned recently to go into service as a Medical Reserve officer.

Lieutenant J. A. Johnson, Nashville, formerly a line officer, was discharged from this position recently and mustered in as a first lieutenant in the Medical Corps.

Dr. James W. McLaren, Jackson, successfully passed the examinations at Fort Oglethorpe recently and has been ordered to the Army Medical School in Washington.

Deaths

Dr. T. E. Sawyer, of Uba, aged 44, died suddenly at Greenfield on June 20.

Dr. F. B. Reager, aged 56, died at his home in Shelbyville on June 29.

Dr. James Partridge, aged 46, died at his home in Alton Park on June 24.

Dr. F. F. Dawn, aged 73, died at his home in Knoxville on May 28.

Dr. W. E. Gray, aged 40, died at his home in Nashville on June 23.

Dr. Thomas H. Gaines died at his home in Martin on July 13.

TEXAS

At El Paso, County Commissioners are planning the erection, at an early date, of isolation wards at the County Hospital.

Surgeon L. H. P. Bahrenburg, U.S.P.H.S., who has been stationed for some time at Galveston, has been ordered to Evansville, Ind., where he will be in charge of a Marine Hospital.

The Texas Council of Public Health Agencies was organized at Dallas on June 24. Representatives of the different health organizations of the State will be included in the membership.

Dr. E. F. McCall, co-operating with the City and County authorities, is conducting an extensive health campaign in Dallas County.

Steps are being taken in Hill County to employ the services of an all-time health officer.

At Dallas an Army Hospital Unit is being formed with Major M. E. Lott, M.O.R.C., in command.

Dr. Doyle Eastland, Waco, is in France with the U. S. expeditionary forces.

Deaths

Dr. Percy Larkin, aged 55, Athens, died in Dallas on May 29.

Dr. R. C. Black, aged 80, died at his home in Gainesville on May 23.

Dr. W. M. Terrell, aged 62, died at his home in Graham on June 23.

Dr. E. W. Brown, aged 57, died at his home in Orange on June 16.

Dr. J. T. Benbrook, aged 76, died at his home in Rockwell on May 30.

Dr. R. E. Davies, aged 69, Petty, died in Dallas on May 21.

Dr. E. R. Young, aged 73, Brenham, died in Galveston on June 17.

Dr. T. V. Walker, aged 85, died at Arlington, his home, on June 3.

VIRGINIA

At Richmond, Henry W. Anderson, attorney-at-law, has been appointed head of the special Red Cross Relief Commission to Roumania. Mr. Alexander was formerly head of the Red Cross work in Virginia.

At Richmond, Dr. Stewart McGuire, Major in the M.O.R.C., has been instructed to raise a 1,000 unit base hospital for service in France.

The Otterburn Springs Sanatorium, Otterburn Lithia Springs, at Amelia, recently opened under the direction of Dr. W. Reid Putney, formerly of the State Epileptic Colony.

Deaths

Dr. Livius Lankford died at his home in Norfolk on June 20.

(Continued on page 36)

THE **STORM BINDER** AND
ABDOMINAL SUPPORTER
(Patented)

No Leather, No Whalebones, No Rubber Elastics. Washable as Underwear
ADAPTED TO USE OF MEN, WOMEN, CHILDREN AND BABIES
For Hernia, Relaxed Sacroiliac Articulations, Floating Kidney, Low and High Operations, Ptosis Pregnancy, Pertussis, Obesity, Etc.
Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours
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Itches,

Irritations, chafings, etc., are exasperating, but—

K-Y Lubricating Jelly

quickly cools, soothes, and relieves. "Keeps the hands away, and doesn't grease the linen."

Sig: Wash off previous application before applying more.

Collapsible tubes, at druggists, 25c.

Samples and literature on request

VAN HORN AND SAWTELL
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Bubbles
of Grain, with Every Food Cell Blasted

Puffed Wheat and Puffed Rice are whole grains steam exploded. The moisture in each food cell has been changed to steam, then exploded. Over 100 million separate explosions occur in every kernel.

The grains retain their shape, though puffed to eight times normal size. This is because they are sealed in guns, and shot at the time of explosion.

The result is easy, complete digestion. Every atom feeds. And these airy titbits, thin and flaky, are also food confections.

This process was invented by Prof. A. P. Anderson, formerly of Columbia University. And no other method of cooking so fits these grains for food.

The Quaker Oats Company
Chicago (1652)

Puffed Wheat **Puffed Rice**
and Corn Puffs
Each 15c Except in Far West

WEST VIRGINIA

At Charleston, on July 9, there was held a meeting of the State Health Council.

The State Medical Association will hold its annual meeting in Fairmont on October 2, 3 and 4. Dr. J. A. Rader, Huntington, is President, and Dr. J. H. Anderson, Maryton, Secretary.

At Wheeling, Dr. M. B. Williams will assume his duties as City Health Commissioner on August 1.

Dr. William Neill, Jr., Charlestown, is stationed at the Army Medical School in Washington.

Dr. H. J. Campbell, aged 56, died at his home in Huntingdon on May 6.

CLASSIFIED ADVERTISEMENTS

FOR SALE—Large static machine; good condition. A bargain. Address Mrs. C. H. Vaught, Richmond, Kentucky.

FOR SALE—Practice in the most beautiful town in the Ozarks. Population 5,000. In the heart of the fruit belt. Country thickly populated; good roads. Town has ten springs and is quite a health resort. Has a hospital. Practice pays $3,000.00. Have been here sixteen years; now desire to go East to put children in school. Fine opening for right man. Methodist preferred. Address Dr. J. Z. Sexton, Siloam Springs, Arkansas.

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CLINICAL EXAMINATIONS OF ALL KINDS
Sero-diagnosis of Syphilis (Wassermann) Autogenous Vaccines—Bacteriological Diagnosis
Correspondence Solicited
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STAFFORD WATER

The BO-GA-HA-MA (Water of Life) of the Indians

DIURETIC
DILUENT
APERIENT
HEMATIC

Dr. Henry Froehling, of Froehling & Robertson, Chemists, Richmond, Va., on October 30, 1914, collected in person water from Stafford Springs from which to make an exhaustive test. A complete report has just been made on the water—a report that justifies all the claims made of Stafford Water by its many friends.

Dr. Froehling in his report comments as follows:

"It has been shown that Radio Emmanations are very effective in Gout, Rheumatism, Sclerosis of the Arteries, and that the use of Radio Active water either by drinking or bathing, have a strong tendency to increase the activity of the kidneys and bladder. This has perhaps been no uncertain factor in producing the many cures of Nephritis and other kidney troubles credited to the Stafford Mineral Water.

Stafford shipped in any quantity—handled by all druggists
We have excellent hotel accommodations at reasonable rates

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Operated by COLBURN, MORGAN COMPANY
VOSSBURG, MISS.

Look for the RED HEART for genuine Stafford Water **Write for booklet and analysis**

Weaning Time

It is advisable to wean an infant before the onset of very hot weather. As an alternate food with breast milk, or as a complete substitute for mother's milk at weaning time,

Gail Borden
EAGLE
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THE ORIGINAL

is especially valuable. It is a clean, safe and dependable product upon which during the past 60 years thousands of infants have been successfully reared.

Samples, Analysis, Feeding Charts, in any language, and our 32-page book "Baby's Welfare," mailed upon request.

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We have mastered its principles and apply them successfuly in constructing *Supporters and Belts* for such conditions as

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Eminent physicians and surgeons endorse our methods and our products. Their names with names of satisfied wearers, furnished on request.

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MULFORD
FOR THE CONSERVATION OF LIFE
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Fall Hay Fever

Hay Fever Pollenin Fall Mulford

(Formerly Hay Fever Vaccine Fall Mulford)

is indicated in the prevention and treatment of Fall Hay Fever. **Hay Fever Pollenin Fall Mulford** contains the protein extracts obtained from the pollens of ragweed, golden-rod and corn, and is indicated in hay fever occurring in persons susceptible to the several pollens.

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consists of the protein extract obtained from the pollen of ragweed—the cause in a majority of cases of hay fever occurring in the Fall—dissolved in physiological saline solution and accurately standardized.

Hay Fever Pollenin Fall Mulford and **Hay Fever Pollenin Ragweed Mulford** are furnished in:

Packages containing 4 sterile glass syringes of graduated strengths, $5.00
In single syringes "D" strength, $1.50

Syringe A contains 0.0025 mg. extract of the pollen proteins
" B " 0.005 " " " " "
" C " 0.01 " " " " "
" D " 0.02 " " " " "

In ordering specify "Hay Fever Pollenin Fall" or "Hay Fever Pollenin Ragweed" as may be desired, otherwise the Hay Fever Fall Pollenin will be supplied.

For Immunization and Treatment of Hay Fever, first dose (Syringe A) should be given at least 30 days before expected attack, followed by syringes B, C and D at five-day intervals; during the entire period of accustomed attack or until immunity is established treatment should be continued, using Syringe D.

There are no contraindications to the therapeutic or prophylactic use of Hay Fever Pollenin Mulford as far as known. Should a clinical reaction occur, characterized by rise in temperature and aggravation of symptoms, the next dose should be decreased.

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50% BETTER
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Professional Protection Exclusively

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will find the most ideal conditions for their rapid recovery at Grove Park Inn, in the mountains of North Carolina, 2,400 feet altitude. The cleanest and most sanitary hotel in the world. Every dish boiled first in soap suds, then in boiling running water, and sterilized with heat when dry. Even the silverware is boiled and sterilized. Normal foods, scientifically prepared, making the food as digestible as dietetic foods usually are. Tubercular persons not received under any circumstances.

The Inn is one and a half miles from the centre of Asheville, a city of 32,000. Eminent physicians and surgeons within call. Hydrotherapeutic treatment and massage. Milk and cream from Biltmore dairies; water from Mount Mitchell. Summer climate most agreeable and exhilarating. Altitude makes it cool. Blankets at night. Mosquitos unknown. For photographs and full information, call at the office of the Southern Railway.

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Sunset Mountain
ASHEVILLE, NORTH CAROLINA

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Tablets Glycerophosphates Compound P-M Co.

Each tablet contains:

Sodium Glycerophosphate 1 gr.
Calcium Glycerophosphate 2 gr.
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Strychnine Alkaloid 1-20 gr.

PITMAN-MOORE COMPANY
INDIANAPOLIS

A Temporary Diet for Infants in Summer Diarrhea

Mellin's Food
4 level tablespoonfuls

Water (boiled, then cooled)
16 fluidounces

Each ounce of this mixture has a food value of 6.2 Calories — affording sufficient nourishment and in a form readily assimilable.

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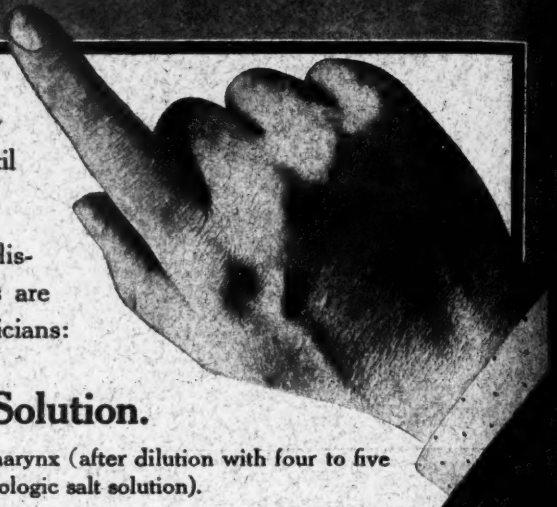

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For the treatment of this distressing malady these products are confidently commended to physicians:

Adrenalin Chloride Solution.

For spraying the nose and pharynx (after dilution with four to five times its volume of physiologic salt solution).

Supplied in ounce bottles, one in a carton.

Adrenalin Inhalant.

For spraying the nose and pharynx (full strength or diluted with three to four times its volume of olive oil).

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THE GLASEPTIC NEBULIZER

is an ideal instrument for spraying the solutions above mentioned. It produces a fine spray and is suited to oils of all densities, as well as aqueous, spirituous and ethereal liquids. *Price, complete (with throat-piece), $1.25.*

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